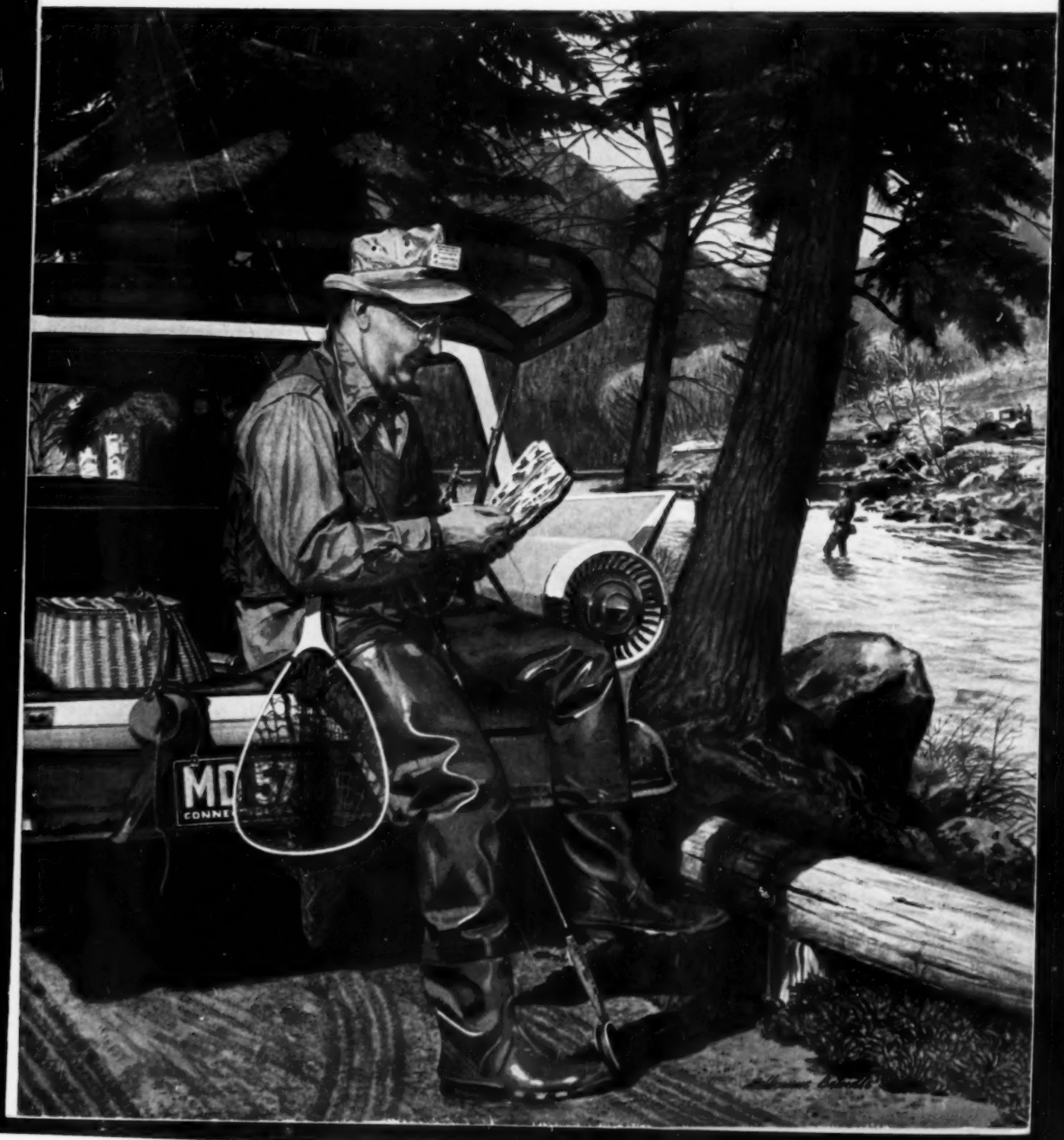
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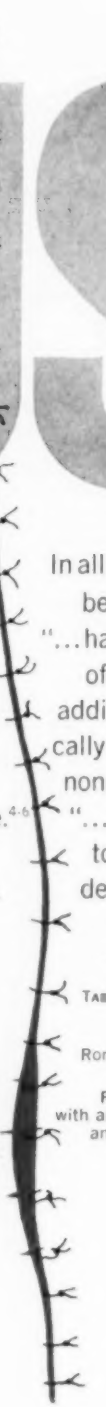
Obesity and Heart Disease

Esophageal Speech

Carotid Sinus Syncope



when cough MUST be prevented



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References: **1.** M. Fishbein, *Postgrad. Med.*, 12:380, 1952. **2.** D. Savage, *Lancet*, 1:420, 1956. **3.** B. T. Fein, *J. Allergy*, 29:209, 1958. **4.** A. Kerr, Jr. and V. J. Derbes, *Ann. Int. Med.*, 39:1240, 1953. **5.** J. Rosenberg and A. G. Davidson, *New York J. Med.*, 54:2488, 1954. **6.** W. S. McCann, R. A. Bruce, F. W. Lovejoy, Jr., P. N. G. Yu, R. Pearson, E. B. Emerson, G. Engel and J. J. Kelly, *Arch. Int. Med.*, 84:845, 1949. **7.** N. Ralph, *Am. J. M. Sc.* 227:297, 1954. **8.** New and Nonofficial Drugs 1958, Philadelphia, J. B. Lippincott Co., 1958, p. 309. **9.** H. A. Bickerman, E. German, B. M. Cohen and S. E. Itkin, *Am. J. M. Sc.* 234:191, 1957.

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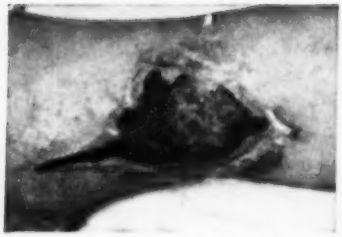
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REFERENCE: 1. Van Wijk, T.W.: Angiology 4:103, 1953. BIBLIOGRAPHY: 1. Gillhespy, R.O.: Brit. M. J. 2:1543, 1957. 2. Gillhespy, R.O.: Angiology 7:27, 1956. 3. Winsor, T.: Angiology 4:134, 1953. 4. Reeder, J.J.: Geneesk. gids. 31:370, 1953. 5. Kappert, A.: Schweiz. med. Wchnschr. 85:237, 1955.

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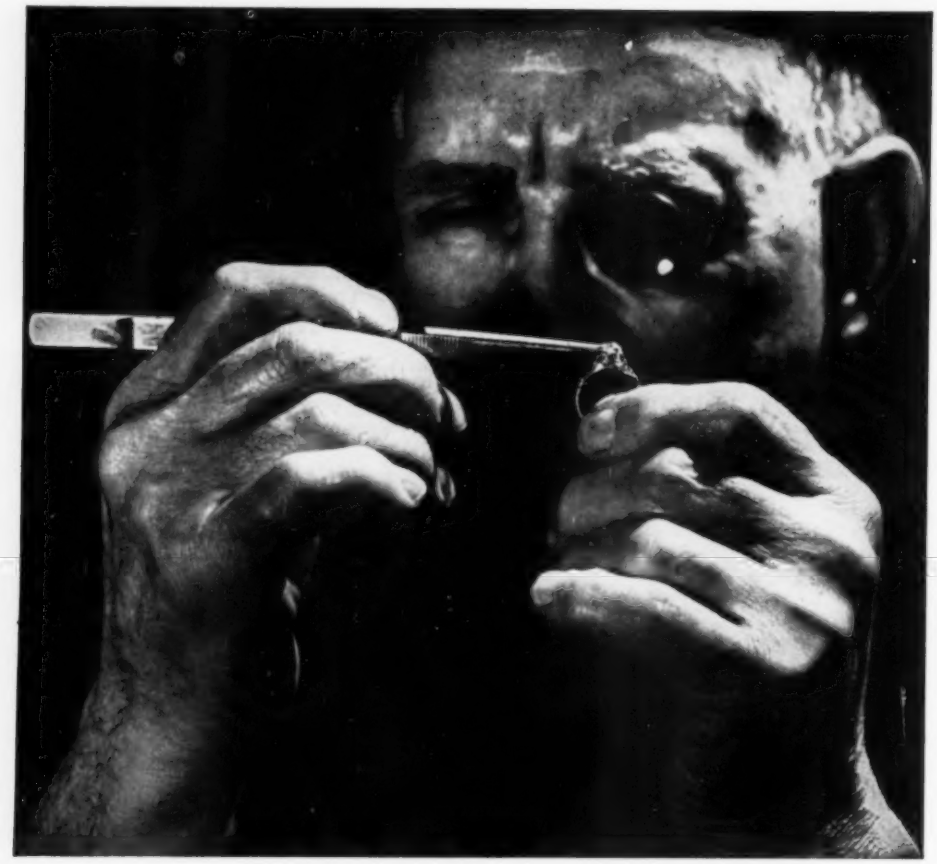


It's the first day of the trout season and Dr. William G. H. Dobbs carefully selects a fly before trying his luck in an inviting New England stream. Like many other physicians, from Maine to California, Dr. Dobbs rates fishing his favorite outdoor sport. For more information about this cover by artist Melbourne Brindle, see page 246a.

BPA

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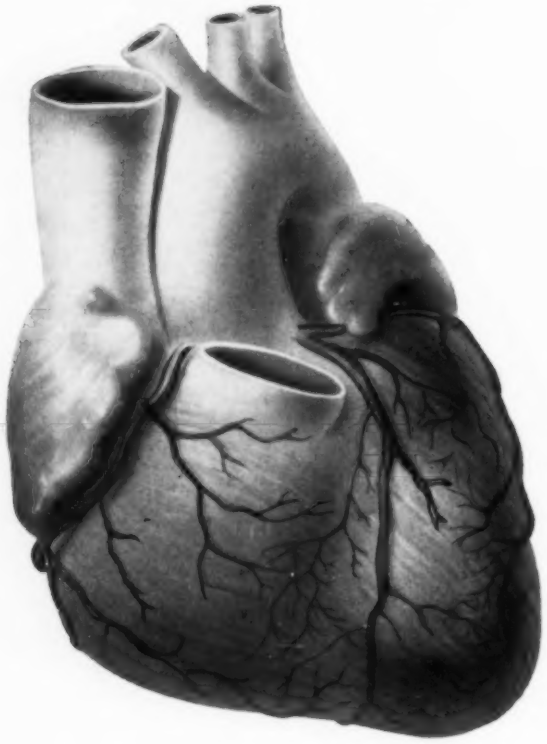
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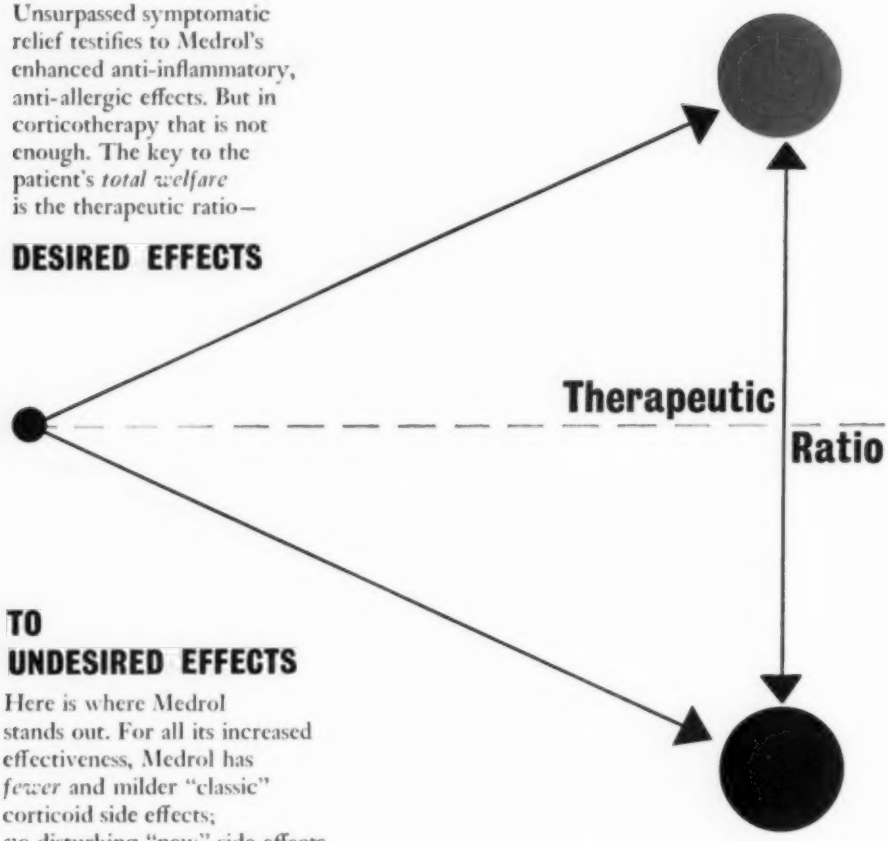
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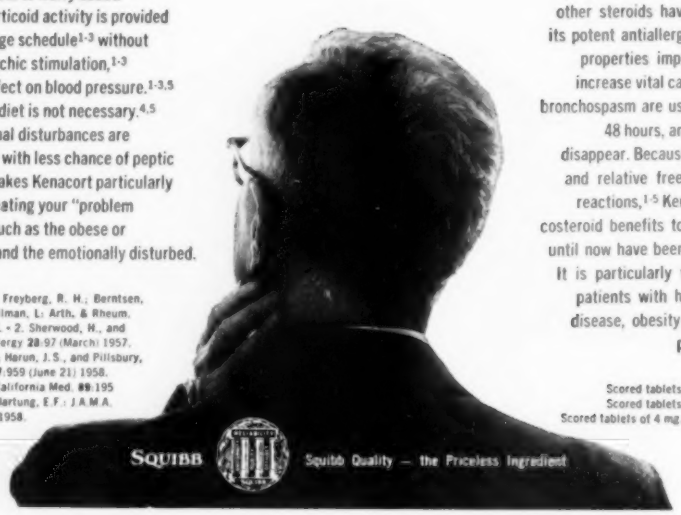


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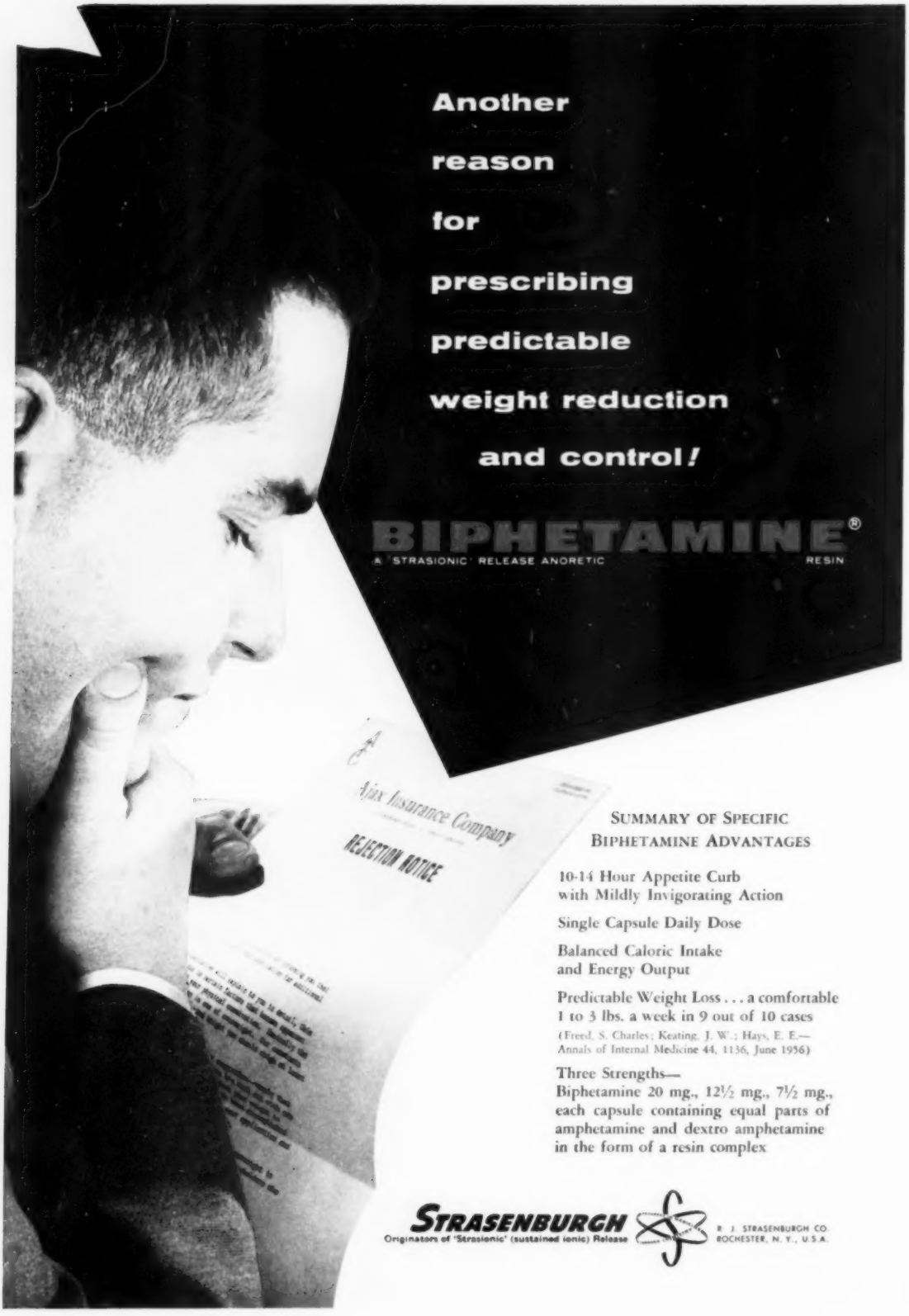
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Menstrual, Premenstrual and Menopausal Syndromes

PMB-200 48a
Milprem 12a

Muscle Relaxants

Paraflex 225a
Parafon 20a

even if your patient is a boom rat*



*logger who rafts logs in a "boom"

he'll be pulling down his pay again soon thanks to

PARAFON

(PARAFLEX® + TYLENOL®)

for muscle relaxation *plus* analgesia

prescribe PARAFON in low back pain—sprains—strains—rheumatic pains

Each PARAFON tablet contains:
PARAFLEX Chlorzoxazone‡ ..... 125 mg.
A most effective oral muscle relaxant
TYLENOL Acetaminophen ..... 300 mg.
The preferred analgesic for painful musculoskeletal disorders

Dosage: Two tablets t.i.d. or q.i.d.

Supplied: Tablets, scored, pink, bottles of 50.

and in arthritis

PARAFON with PREDNISOLONE

Each PARAFON WITH PREDNISOLONE tablet contains: PARAFLEX® Chlorzoxazone‡ 125 mg., TYLENOL® Acetaminophen 300 mg., and prednisolone 1.0 mg.

Supplied: Tablets, scored, buff colored, bottles of 36.

Precautions: The precautions and contraindications that apply to all steroids should be kept in mind when prescribing PARAFON WITH PREDNISOLONE.

McNEIL

McNeil Laboratories, Inc • Philadelphia 32, Pa.

†Trademark ‡U.S. Patent Pending

249A53

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Polio

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when beauty aids lead



to dermatoses

BENADRYL®

ANTIHISTAMINIC-ANTISPASMODIC

provides prompt relief of allergic distress

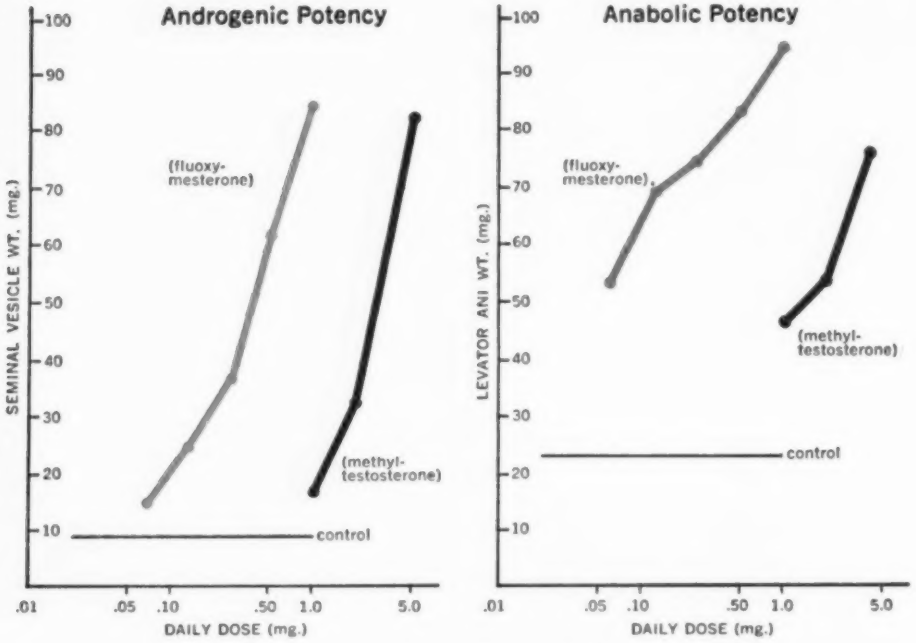
In dermatoses resulting from sensitivity to cosmetic ingredients, BENADRYL *provides effective control until the causative irritant can be identified and eliminated. Potent antiallergic action of* BENADRYL *gives prompt and prolonged relief from itching and whealing, successfully breaking the vicious itch-scratch-infection cycle.* BENADRYL *Hydrochloride (diphenhydramine hydrochloride, Parke-Davis) is available in a variety of forms—including Kapseals,® 50 mg. each; Kapseals 50 mg., with ephedrine sulfate, 25 mg.; Capsules, 25 mg. each; Elixir, 10 mg. per 4 cc.; and for parenteral therapy, Steri-Vials,® 10 mg. per cc., and Ampoules, 50 mg. per cc. For delayed action,* BENADRYL *Hydrochloride Emplets,® 50 mg. each.*

PARKE, DAVIS & COMPANY · DETROIT 32, MICHIGAN

the ULTIMATE

In a comparison of androgenic and anabolic activity, clinical studies show that at least five times as many milligrams of methyltestosterone are needed to provide the same effect as fluoxymesterone.*

*Charts adapted from Lyster, S. C., Lund, G. H., and Stafford, R. O.: Endocrinology *58*:781 (June) 1956.



in androgen therapy Ultandren™

(fluoxymesterone CIBA)

an oral androgen with at least five times the potency of methyltestosterone tablets, and even greater clinical potential than intramuscular testosterone preparations

Ultandren permits easily controlled administration of androgen therapy—without painful injections, local reactions or skipped doses. Weight for weight, it has an even greater therapeutic potency than parenterally administered testosterone derivatives, and at least five times the androgenic and anabolic activity of methyltestosterone tablets. Moreover, Ultandren does not increase undesirable effects such as virilism in females, and in therapeutic doses it induces little or no sodium and water retention. Jaundice, occasionally encountered with usual androgen therapy, has not been reported.

SUPPLIED: *Tablets*, 2 mg. (light-green, scored) and 5 mg. (violet, scored); bottles of 40.

2/2659MA

CIBA
SUMMIT, N. J.



Off the Record...

True Stories From Our Readers

Contributions describing actual and unusual happenings in your practice are welcome. For obvious reasons only your initials will be published. An imported German apothecary jar will be sent in appreciation for each accepted contribution.

Say It With Flowers

During internship, young doctors pull many a "boner" but are often topped by "green" student nurses. In the midst of visiting hours, a surgical patient of foreign birth felt it necessary to use the urinal. Unable to call it by name, he picked the object he thought most resembled it.

"Oh, nursie, nursie," he called. "You please ta gimme da vase."

"Why, certainly, sir," answered the young Florence Nightingale, a probationer, entering the ward.

"Now how large is your bouquet?"

C.B., M.D.
Lawrence, Mass.

Always a Hitch

With my work at the hospital and at my office finished for the day, I locked the office door at 9:15 P.M. Just as I put the light out, the doorbell rang. It was one of my "time-consuming late-comers." Graciously, yet appearing to be in a hurry, I told him that I was unable to see him that evening because I had an emergency at the hospital in town. He apologetically stated that his trouble could wait until tomorrow but, since I was going to the hospital, could he accompany me on the ride to town. Yes, you guessed it! I had to take him on a fifteen minute ride to save face, and my blood pressure skyrocketed while riding home alone.

E.A.S., M.D.
Baltimore, Md.

Hum D

I have the habit, (good or bad), of humming while I am examining a patient. One evening a lady, whom I had seen several times, brought her husband in for his first visit. After I had taken the history, I was looking in his ear with the otoscope and was humming a tune when his wife came up with this remark: "It's like I told you honey—he ain't much on doctorin' but he sure is h— on entertainment!

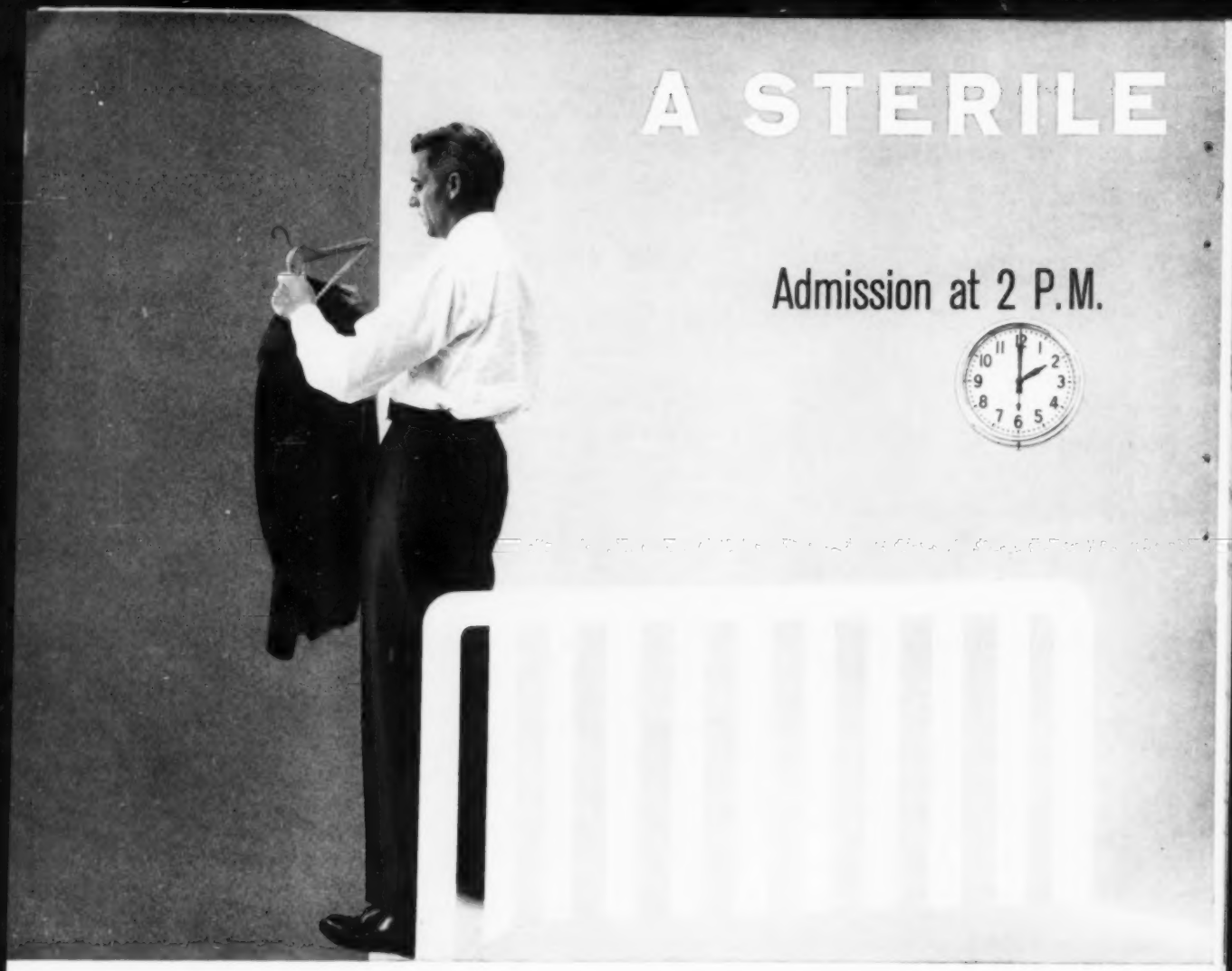
F.R., M.D.
Columbus, Ohio

This Is True?

A man regained consciousness in our hospital recently and after looking around the room, bewildered, he asked the nurse where he was. She informed him that he had suffered a head injury three days before, and had been in the hospital—unconscious—ever since. Unbelieving, he said, "How could I have been unconscious for three days and still be alive? How could you feed me?"

Reassuring him, the nurse said, "That was

Concluded on page 29a



for intestinal antisepsis... **NEOT**

NEOTHALIDINE *provides fast, effective bowel sterilization.* It affords broad antibacterial activity in a concentrated, non-absorbed dosage form. By reducing gas-producing organisms, NEOTHALIDINE provides a non-inflated, easy-to-handle bowel. It is effective in the presence of food and other organic substances, and aids in the mechanical cleansing of the bowel.

Monilial complications are not likely to occur when fast-acting NEOTHALIDINE is prescribed in the recommended dosage.

NEOMYCIN is widely used as an intestinal antiseptic because it is rapidly effective against most intestinal pathogens.

SULFATHALIDINE ® (phthalylsulfathiazole) is the ideal adjunct to neomycin because of its effectiveness against Aerobacter aerogenes, Shigella, and Clostridia—organisms that are not responsive to neomycin therapy alone.

Together, as NEOTHALIDINE—*a formula that closely approaches the ideal intestinal antiseptic.*[1]

Dosage: the recommended adult dosage is 15 cc. of NEOTHALIDINE Suspension every four hours for six doses. Dosage schedule may be accelerated to provide bowel sterilization in 18 hours.

Supplied: as NEOTHALIDINE Granules in a 120-cc. dispensing bottle, to be reconstituted with water at the time of dispensing. Each bottle contains 12.0 Gm. of Sulfathalidine® (phthalylsulfathiazole) and 8.0 Gm. of neomycin sulfate (equivalent to 5.6 Gm. neomycin base).

1. Poth, E. J.: Intestinal Antisepsis in Surgery, J.A.M.A. 153:1516, Dec. 26, 1953.

BOWEL IN 18 HOURS



HALIDINE®

NEOMYCIN AND SULFATHALIDINE®

IT TAKES NEOMYCIN AND SULFATHALIDINE® 2 TO DO THE JOB

NEOTHALIDINE and SULFATHALIDINE (phthalylsulfathiazole) are trademarks of Merck & Co., Inc.

MSD MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

In the Treatment of Rheumatic Disorders Greater stability of maintenance dosage minimizes risks of hormonal imbalance

In Sterazolidin, the anti-inflammatory actions of prednisone and Butazolidin* are combined to permit lower effective dosage of each. Clinical experience has indicated that patients can be well maintained on this combination over prolonged periods with relatively low, stable dosage levels of each component, thus minimizing the problems arising from excessively high doses of corticosteroids. Other side effects have also been gratifyingly few. Antacid and spasmolytic components are contained in Sterazolidin capsules for the benefit of patients with gastric sensitivity.

Sterazolidin®: Each capsule contains prednisone 1.25 mg.; phenylbutazone 50 mg.; dried aluminum hydroxide gel 100 mg.; magnesium trisilicate 150 mg.; homatropine methylbromide 1.25 mg.

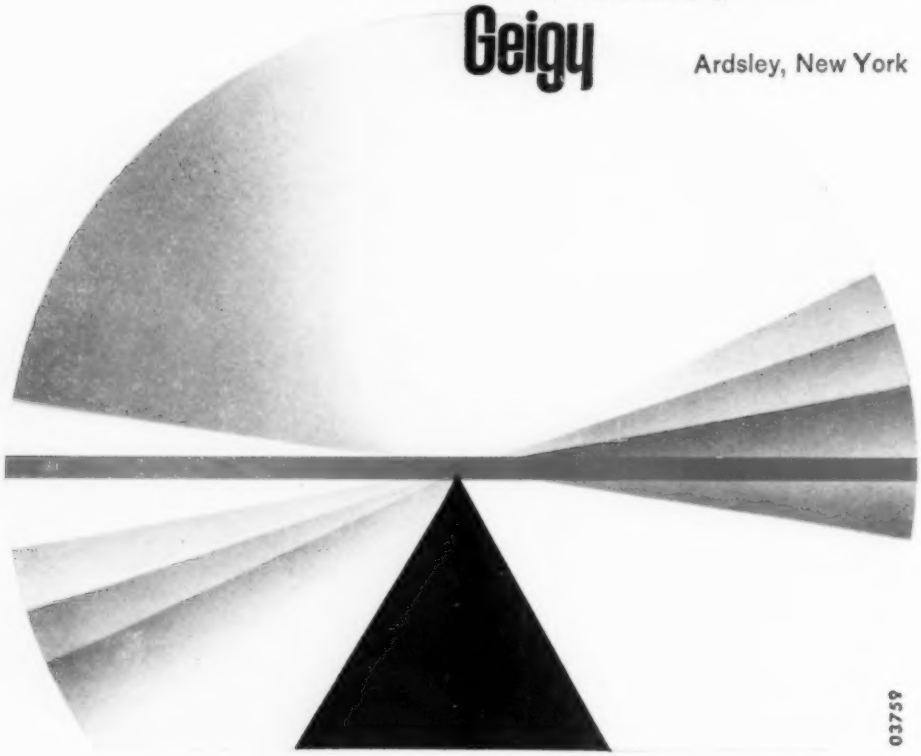
Detailed information available on request.

*Geigy's trademark for phenylbutazone—Reg. U. S. Pat. Off.

new **Sterazolidin®** Capsules

prednisone-phenylbutazone, Geigy

Geigy Ardsley, New York



03759

Concluded from page 25a

easy; we fed you by rectum." "By rectum! But how?", he asked.

"I'll show you," she said, "Would you like to try it?"

"Okay, I guess so."

"What would you like to have?" asked the nurse. "How about some tea?" "All right . . . fine," was the reply.

The nurse left the room, made the tea, and returned to the room, where she poured the tea into an enema bag, and instructed the patient to roll over onto his side. The patient was quite co-operative at first, but after a small amount of the tea had run in, he suddenly jumped, and screamed, "STOP, STOP!!"

The nurse said, excitedly, "What's the matter . . . too hot?" "NO," he said, "TOO SWEET!"

G. H., M.D.
New York, N. Y.

Tied Up

The supervisor of the operating room was entertaining my two small sons while I made my Sunday morning hospital visits.

The boys were impressed with the shiny instruments in the glass doored cabinets and properly amazed at the huge scrub basins and the magic faucets that worked with only a slight pressure of the knee.

But my younger son wasn't quite satisfied. Finally, he asked, "Where is the string that Daddy always gets himself tied up in surgery with?"

C.P.J., M.D.
Garfield, N. J.

Stirname

One day when I greeted a patient with my usual "How do you do and what can I do for you today?" she promptly answered "kill me quick." I informed her that she had not contacted "Murder, Inc." Imagine my surprise when I found she thought I had asked her what her name was—Her name?—Rebecca Killmequick!

M.L.D., M.D.
Brinkley, Ark.

Eager Beaver

Several years ago, a couple in their late twenties came to me with the complaint that they had been married for eight years and had failed in their attempts at reproduction.

After complete physical examination on both the husband and wife, they were placed under treatment with the usual temperature charts and records of times of intercourse. They were most faithful patients, cooperating to the fullest degree, and were seen at monthly intervals.

After some fourteen months, they came into the office, stating that they were sure that conception had taken place, and we all exchanged congratulations.

Due to the length of time and the effort they had expended, I felt that an apology was indicated, so I said, "I am sorry that this has taken such a long time," whereupon the husband broke into a broad grin and replied, "Doctor, I can tell you I have not regretted a moment of it."

M.E.W., M.D.
Berkeley, Calif.

Sentence Suspended

She had just had her first child, and on discharge from the hospital, asked us to inform her hyper-sexed husband of the need for celibacy for six weeks postpartum.

His answer—"Gee, thanks, Doc. I thought it was ninety days!"

R.J., M.D.
Eureka, Calif.



in management of the constipation "symptom-complex"

TWO NEW PRODUCTS

as convenient tablets . . . only 1 to 3 daily

for bulk

Celginace

Calcium and sodium alginates and dioctyl sodium sulfosuccinate, Mead Johnson

tablets granules

Celginace provides smooth, non-irritating, "hydrasorbent" bulk in the intestine, not in the stomach[1]...

this avoids excessive gastric fulness and depression of appetite.

1. Mulinos, M. G., and Glass, G. B. J.: Gastroenterology 24: 385-393 (May-Aug.) 1953.

for stool softening—bulk
—peristaltic stimulation

Combinace

Calcium and sodium alginates, dioctyl sodium sulfosuccinate and anthraquinone derivatives from cascara, Mead Johnson

tablets granules

When the patient presents a complex of symptoms and a comprehensive approach to therapy is indicated, Combinace provides (1) smooth, non-irritating, "hydrasorbent" bulk of alginates, (2) the predictable, yet gentle peristaltic stimulation of Peristim,®** (3) the moistening action of Colace.

A single product . . . with three-fold effect.

Mead Johnson
Symbol of service in medicine

the constipation "symptom-complex"

For each specific symptom or any combination of symptoms . . . you can select the anticonstipant which best meets *the needs of the individual patient:*

if the need is for	prescribe
softer, easier-to-pass stools	**Colace®****
predictable, gentle peristalsis	**Peri-Colace®†**
bulk in the intestine	**Celginace**
a combination of these effects	**Combinace**

**Standardized preparation of anthraquinone derivatives from cascara sagrada, Mead Johnson*

***Dioctyl sodium sulfosuccinate, Mead Johnson*

†Dioctyl sodium sulfosuccinate and anthraquinone derivatives from cascara, Mead Johnson



There are
1875 square feet of
adsorptive surface
in this spoon

SPENSIN contains attapulgite, a new therapeutic agent having 5 to 8 times the adsorptive capacity of kaolin. Because of the lattice-like structure of its extremely fine particles, a single dose of SPENSIN contains approximately 1875 square feet of adsorptive surface.

In the symptomatic treatment of diarrhea, SPENSIN aids in the removal of bacteria and bacterial toxins • helps restore normal absorption of fluids • protects irritated intestinal mucosa • produces stools of normal consistency.

SPENSIN-PS, containing two synergistic antibiotics, dihydrostreptomycin and polymyxin, for specific therapy in infectious diarrhea caused by organisms susceptible to these agents.

IVES-CAMERON COMPANY
Philadelphia 1, Pa.

for the control of diarrhea

SPENSIN® / SPENSIN®-PS

SPENSIN is activated attapulgite and pectin in alumina gel.

SPENSIN-PS, in addition, contains dihydrostreptomycin sulfate and polymyxin B sulfate.



Diagnosis, Please!

Edited by Maxwell H. Poppel, M.D., F.A.C.R., Professor of Radiology, New York University College of Medicine and Director of Radiology, Bellevue Hospital Center

WHICH IS YOUR DIAGNOSIS?

1. Tumor
2. A.V. malformation
3. Bronchiectasis
4. Hamartoma

(Answer on page 245a)



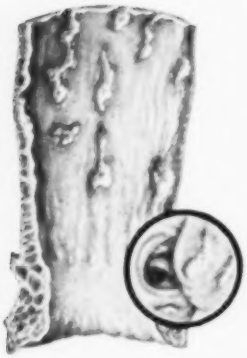
Now
in inflammatory anorectal disorders . . .

The Promise of Greater Relief

the first suppository to contain

hydrocortisone for effective control of proctitis

- Proctitis accompanying ulcerative colitis
- Radiation proctitis
- Postoperative scar tissue with inflammatory reaction
- Acute and chronic nonspecific proctitis
- Acute internal hemorrhoids
- Medication proctitis
- Cryptitis



Ulcerative Colitis



Radiation Proctitis



Postoperative Scar Tissue

Supplied: Suppositories, boxes of 12. Each suppository contains 10 mg. hydrocortisone acetate, 15 mg. extract belladonna (0.19 mg. equiv. total alkaloids), 3 mg. ephedrine sulfate, zinc oxide, boric acid, bismuth oxyiodide, bismuth subcarbonate, and balsam peru in an oleaginous base.

Wyanoids® HC

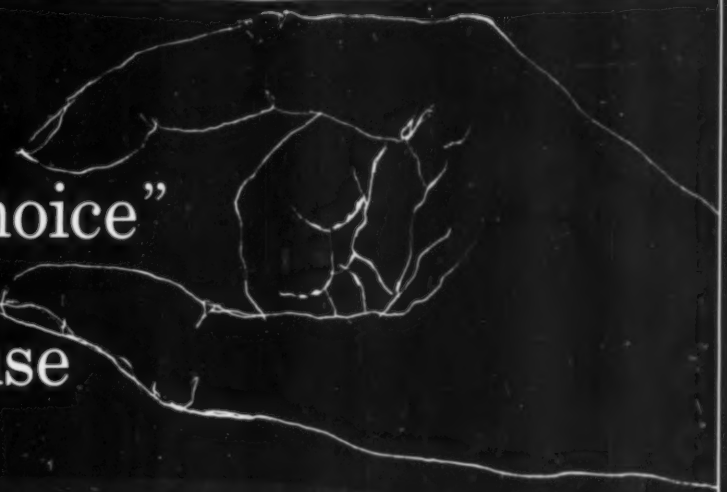
Rectal Suppositories with Hydrocortisone, Wyeth

Wyeth
Philadelphia 1, Pa.

which antibiotic should I use first?

in skin, soft tissue and post-surgical infections–
in genito-urinary infections–
in respiratory tract infections–

due to staph or "gram negatives"



the
"first choice"
antibiotic
to use
is

KANTREX
INJECTION

because... (see over)

Kantrex is the "first choice" antibiotic for use in infections due to staph and "gram negatives"...

because it is:

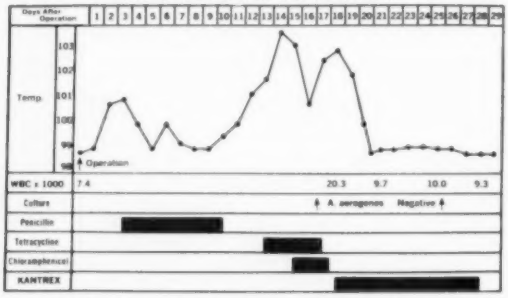
- **bactericidal**—not merely bacteriostatic
- rapid-acting
- effective against a wide range of organisms, including many strains resistant to other antibiotics
- clinically safe in specified dosage
- less likely to lead to the development of resistant organisms in clinical usage
- "most likely to succeed"—in saving time, cutting the cost of illness, reducing complications and bringing about a successful therapeutic result

because it is: clinically proven

in over 1000 cases by 111 investigators, reported in 42 published papers

POST-SURGICAL INFECTION
KANTREX Clinical Report No. 799

RAPID RESPONSE TO KANTREX



E. D., a 73-year-old male, underwent a suprapubic cystotomy and fulguration of papillary carcinoma of the bladder. His temperature began rising on the 10th postoperative day; subsequently urine and blood cultures yielded *A. aerogenes*. After penicillin, tetracycline and chloramphenicol failed to alter the course of the infection, KANTREX brought about a dramatically improvement.

—Rutenburg, A. M., et al.: Annals N.Y. Acad. Sci. 76:348, 1958.

typical dramatic response

(even after other antibiotics failed)

Supply: Available as a ready-to-use sterile aqueous solution in two concentrations (stable at room temperature indefinitely):

KANTREX Injection, 0.5 Gm. kanamycin (as sulfate) in 2 ml. volume.
KANTREX Injection, 1.0 Gm. kanamycin (as sulfate) in 3 ml. volume.

KANTREX® INJECTION

KANTREX Sensitivity Discs and comprehensive literature available on request

BRISTOL LABORATORIES INC., Syracuse, New York

Bristol

The effect of Unitensen (cryptenamine) on 21,913 hypertensive patients

Summary of the experiences of 2,082 physicians in private practice.
A continuation of "Proof In Practice."

Safe, Dependable Office Management For Most Hypertensive Patients

The "Proof In Practice" study validates, in *day-to-day private practice*, the effectiveness of Unitensen products (cryptenamine) as reported in clinical trials in hospitals and institutions. It proves that Unitensen affords well tolerated, dependable office management for the majority of hypertensive patients. Unitensen effectively lowers blood pressure . . . improves renal and cerebral blood flow . . . exerts no adverse effects on circulation . . . and is free of serious side effects. The results of the Study are shown in Table 1.

Table 1.

No. of Patients	Results	Percent
6,822	Excellent	31.1%
11,201	Good	51.1%
2,802	Fair	12.8%
1,088	Unsatisfactory	5.0%
622	Side effects	3.0%

Basic Hypertensive Therapy

Although many of the patients in the Study also received diuretics and/or tranquilizers during the course of treatment, it was noted that the vasodilating effect of Unitensen was required to obtain optimum blood pressure control. Unitensen, a true hypotensive agent is potentiated by diuretics. A combination of the two is frequently recommended for lower dosage of each drug, minimizing the side effects of either.[1,2,3,4]

UNITENSEN-R®
Each tablet contains cryptenamine (tannates) 1.0 mg., reserpine 0.1 mg.

UNITENSEN-PHEN®
Each tablet contains cryptenamine (tannates) 1.0 mg., phenobarbital 15 mg.

UNITENSEN®
Each tablet contains cryptenamine (tannates) 2.0 mg.

Clinical supplies available upon request.

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4. Finnerty, F. A., Jr. (Georgetown University): "Treatment of Hypertension Associated with Toxemia of Pregnancy" Presented: Symposium on Hypertension, Hahnemann Medical College and Hospital, Philadelphia, Pennsylvania, December 8-12, 1958.

Tracin, Neisler & Co. Decatur, Illinois



these physical scars need never have developed

Surgical techniques can now almost completely remove this man's severe acne scars.

But if he, and thousands like him, had sought early treatment, the scars might never have developed. A physician's advice and guidance concerning his condition, plus treatment with 'Acnomel', might have prevented his acne from progressing to the severe, scarring stage.

'Acnomel' conceals acne lesions as it heals them, thus reducing embarrassment while treatment goes on. The results from 'Acnomel' therapy are often evident in a few days rather than in weeks or months.

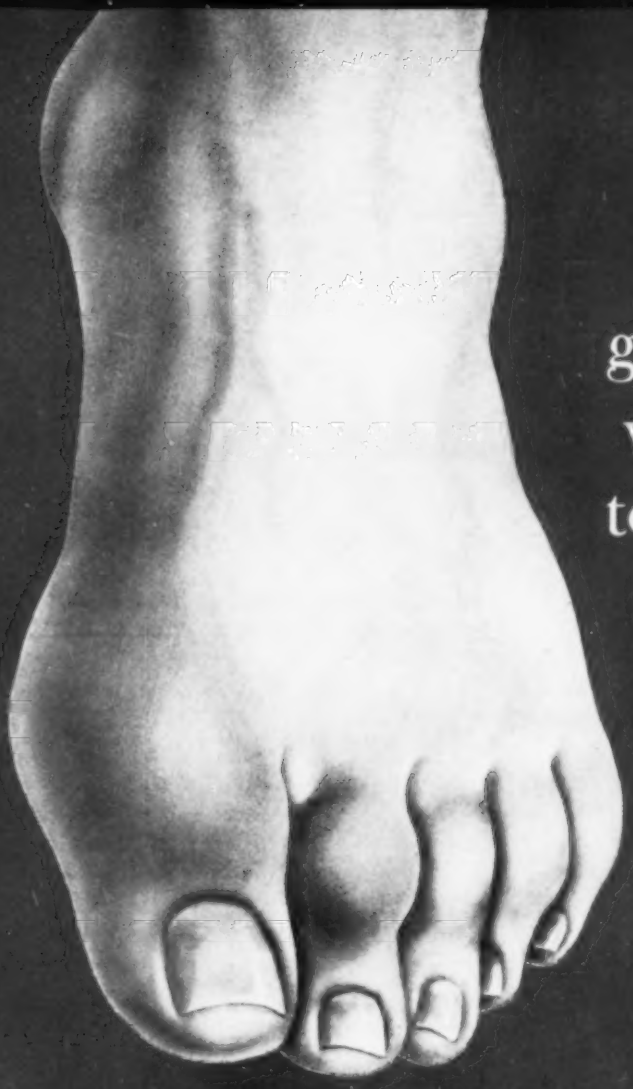
When you see a patient who needs advice about acne, remember 'Acnomel'. Available in 2 forms: Cream for use at home; Cake in a handy compact for use away from home.

Acnomel* sulfur • resorcinol • hexachlorophene

conceals as it heals

SKF Smith Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off.



gout without toe involvement?

"Joints other than the first metatarsophalangeal are initially involved in half the cases."[1]

"The metatarsophalangeal joint of a great toe is affected early or repeatedly in some cases, rarely or never in others . . . one must not insist on its presence . . . before diagnosing gout."[2]

"The possibility of gout should be investigated in each patient with arthritis, irrespective of the apparent type."[3]

"The concentration of uric acid in the serum has been emphasized and re-emphasized as a diagnostic aid. In our experience it is a most valuable one."[3]

"All patients complaining of non-traumatic musculoskeletal discomfort should have at least one serum uric acid determination."[4]

IF THE DIAGNOSIS IS GOUT . . .

common manifestations of gout









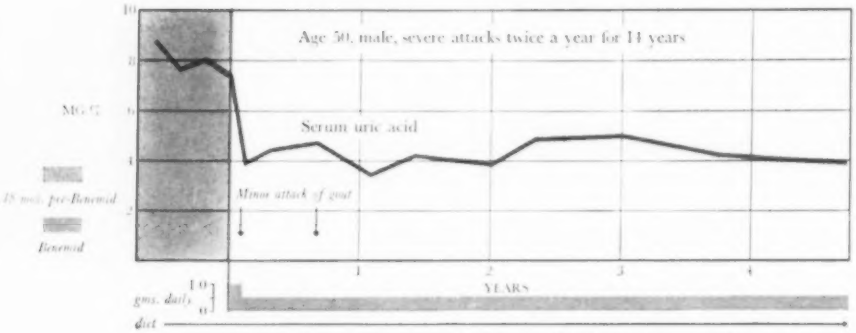
INDISPENSABLE FOR THE TREATMENT OF CHRONIC GOUT

Benemid®

PROBENECID

a specific for gout

"As to the use of uricosuric agents in interval treatment of symptomless gout, probenecid ['Benemid'], a benzoic acid derivative, is probably the best agent for prolonged use."[2]



Control of gout in therapy with 'Benemid', plus adherence to low purine and low fat diet. Two minor attacks occurred during the first year of treatment.[3]

- has the most pronounced uricosuric effect of any drug
- causes marked decrease in serum uric acid
- acute attacks usually become less frequent and less severe
- may cause regression in subcutaneous tophi, resorption of osseous tophi and recalcification of decalcified bony structure
- arrests or prevents bone damage, so that need for surgery may be obviated
- helps return patients to work
- negligible toxicity

Dosage between acute episodes: 0.25 Gm. twice daily for one week, followed by 1 Gm. daily in divided doses. (Many clinicians prefer to give 'Benemid' and colchicine concurrently.)

Supply: 0.5 Gm. tablets, bottles of 100 and 1000.

1. Coodley, E.: Differential diagnosis of rheumatic diseases. Am. Pract. & Dig. Treat. 9:1238, Aug. 1958. 2. Hench, P. S.: Gout and gouty arthritis, in Cecil, R. L.: A textbook of medicine, ed. 9, Phila., W. B. Saunders Co., 1955, p. 651, 656. 3. Lockie, L. M.: Symposium on gout: Diagnosis, Metabolism 6:269, May 1957. 4. Kuzell, W. C.; Schaffarzick, R. W.; Naugler, W. E.; Koets, P.; Mankle, E. A.; Brown, B., and Champlin, B.: Some observations on 520 gouty patients. J. Chron. Dis. 2:645, 1955. 5. Bartels, E. C.: Symposium on gout: Treatment of gout, Metabolism 6:297, May 1957.

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MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.



Coroner's Corner

A beautiful imported German apothecary jar will be sent to each contributor of an original case report.

A seventy-six year-old woman found dead in desolate tenement house. She had not been seen for days and the police found her in bed with face on pillow, partly undressed as if going to bed. Her body, discovered late in the afternoon, was covered with large blue patches. There was disorder surrounding the body with upset lamp. Not far from her was an empty whiskey bottle. Circumstances were obviously suspicious of foul play and the coroner requested that an autopsy be performed.

At examination the main findings were marked cyanosis of the entire body with large blue patches which, however, did not show pattern of beating or violence but increase of cyanosis and passive congestion. There was also general anasarca with edema of particularly lower extremities. There was not the slightest evidence of violence as bones were intact and no deep hemorrhages were found. There was marked arteriosclerotic stenosis of the aorta and hypotrophy and dilatation of left heart. Edema of the lungs and cardiac sclerosis were evidence of heart failure of long standing.

A lonesome old woman, obviously indigent, was not under medical care. She tried to find escape in alcohol. As rigor mortis had dissolved she must have been dead at least eighteen to twenty-four hours. In her dying hours she stumbled in the room upsetting room and bruising herself. Bruises were accentuated by the cyanosis. At first sight the situation could only suggest foul play.

CORONER'S PHYSICIAN
Oswego, New York





better home care,
improved morale
for your incontinent
patients

Chux® DISPOSABLE UNDERPADS

Extra large Hospital Style 17½" x 24"
and Large 13" x 17½"

Medicated and deodorizing (benzalkonium chloride)
Disposable to make frequent bed changes much quicker, easier.
Waterproof backing for complete bed protection.

NEW

Chix® ADULT CLOTH DIAPERS

Complete protection for the ambulatory incontinent.
Soft, long-wearing surgical-type gauze.
Added center panel for maximum absorbency.

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AND OTHER PAT. PEND
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Both products available in drug and department stores everywhere.

PROFESSIONAL PRODUCTS DIVISION Chicopee Mills, Inc., 47 Worth Street, N.Y.13, N.Y.

A Johnson & Johnson COMPANY

". . . the digitalis preparation of choice for the treatment of the usual patient with congestive heart failure . . ."*

GITALIGIN®

WIDEST SAFETY MARGIN—AVERAGE THERAPEUTIC DOSE ONLY 1/5 THE TOXIC DOSE. The average therapeutic dose of other digitalis preparations is 2/3 the toxic dose.†

FASTER RATE OF ELIMINATION THAN DIGITOXIN OR DIGITALIS LEAF. Therefore, should toxicity inadvertently occur, symptoms would be of much shorter duration with GITALIGIN.

THESE SIMPLE DOSAGE EQUIVALENTS MAKE IT EASY TO SWITCH YOUR PATIENT TO GITALIGIN—0.5 mg. of Gitaligin is approximately equivalent to 0.1 Gm. digitalis leaf, 0.5 mg. digoxin or 0.1 mg. digitoxin.

Supplied:

GITALIGIN 0.5 mg. Tablets—bottles of 30 and 100.
GITALIGIN Injection Ampuls—2.5 mg. in 5 cc. sterile I.V.—lotion.
GITALIGIN Drops 30 cc. bottle with special calibrated dropper.

*[illegible]
†[illegible]

WHITE LABORATORIES, INC., KENILWORTH, NEW JERSEY

Hypertensive Heart Disease





when it's skin deep

use XYLOCAINE *ointment*

. . . in nearly all external symptoms of *pain, itching* and *burning*, e.g., sunburn, minor burns, insect bites, abrasions, poison ivy and other contact dermatitis, hemorrhoids and inoperable anorectal conditions, and cracked nipples.

Xylocaine Ointment, a surface or topical anesthetic, gives fast, effective and long lasting relief. Its *water-soluble, nonstaining* base melts on contact with the skin, to assure immediate release of the anesthetic for fast action and it does not interfere with the healing processes.

ASTRA PHARMACEUTICAL PRODUCTS, INC., WORCESTER 6, MASS., U.S.A.

XYLOCAINE® OINTMENT

(brand of lidocaine*)

2.5% & 5%

SURFACE ANESTHETIC

*U.S. Pat. No. 2,441,498. Made in U.S.A.



over and above the rapid relief and improvement of symptoms

Decadron helps restore a "natural" sense of well-being

THE MOST EFFECTIVE OF ALL ANTI-INFLAMMATORY CORTICOSTEROIDS

Decadron

DEXAMETHASONE

Merck Sharp & Dohme

treats more patients more effectively

the crowning achievement of the first corticosteroid decade



Decadron

DEXAMETHASONE

treats more patients more effectively

Comprehensive and thorough clinical trials show that **DECADRON** on a milligram basis is the most effective of all oral corticosteroids ▪ **DECADRON** is virtually free of sodium retention, potassium depletion, hypertension, or edema ▪ **DECADRON** is virtually free of diabetogenic effect in therapeutic doses ▪ **DECADRON** has not caused any new or unusual reactions ▪ **DECADRON** helps restore a "natural" sense of well-being.

INDICATIONS: All allergic and inflammatory disorders amenable to corticosteroid therapy. **CONTRAINDICATIONS:** Herpes simplex of the eye is an absolute contraindication to corticosteroid therapy. DECADRON should be administered with the same precautions observed with other corticosteroid therapy. **DOSAGE AND ADMINISTRATION:** Transfer of patients from other corticosteroids to DECADRON may usually be accomplished on the basis of the following milligram equivalence:

one 0.75 mg. tablet of **Decadron*** (dexamethasone) replaces:

One 4 mg. tablet of	One 5 mg. tablet of	One 20 mg. tablet of	One 25 mg. tablet of
methylprednisolone or triamcinolone	prednisolone or prednisone	hydrocortisone	cortisone

SUPPLIED: As 0.75 mg. scored pentagon-shaped tablets. Also as 0.5 mg. tablets, to provide maximal individualized flexibility of dosage adjustment, since many patients achieve adequate control even on lower dosage.

Detailed literature is available on request.
DECADRON is a trademark of Merck & Co., Inc.

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SYMPTOMATIC RELIEF ...AND FAST

from the

DRIP AND STUFFINESS

associated with

COMMON COLD

'FEDRAZIL'®

Sugar-coated Tablets

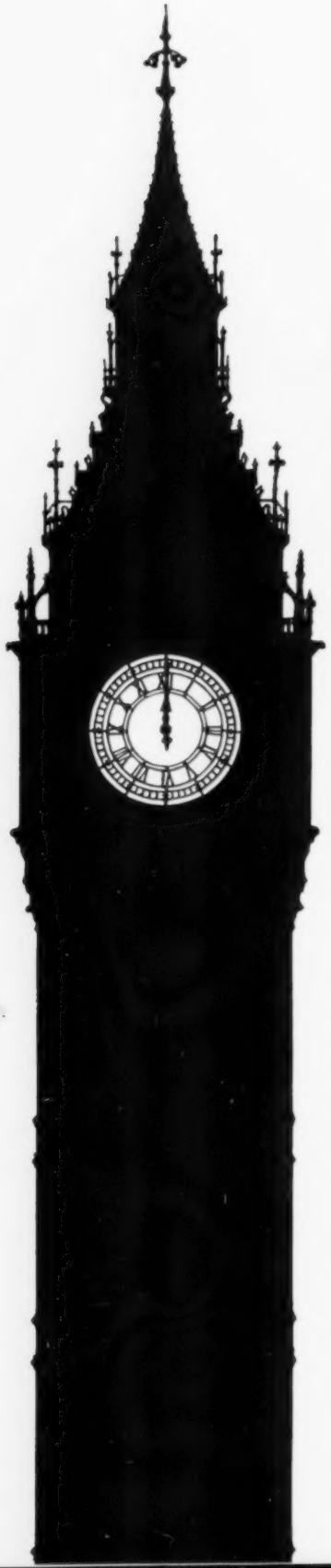
. . . contain an orally effective nasal decongestant combined with a good antihistamine

Dose: 2 tablets initially, then one every 3 or 4 hours as needed

Each sugar-coated tablet contains: 'Sudafed'® brand Pseudoephedrine Hydrochloride . . . 30 mg.
'Perazil'® brand Chlorcyclizine Hydrochloride . . . 25 mg.



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NEW PRELUDIN®

ENDURETS™

A PROLONGED-ACTION DOSAGE FORM

Clinical experience has long established PRELUDIN as an antiobesity agent distinguished by its efficacy and its relative freedom from undesirable side actions. Now, convenience is added to reliability in ENDURETS... a specially devised long-acting pharmaceutical form.

Just one PRELUDIN ENDURET (75 mg.) tablet after breakfast curbs appetite throughout the day, in the vast majority of cases.

PRELUDIN® (brand of phenmetrazine hydrochloride) ENDURETS™.
Each ENDURET prolonged-action tablet contains 75 mg. of active principle.
PRELUDIN® is also available as scored, square, pink tablets of 25 mg. for 2 to 3 times daily administration.
Under license from C. H. Boehringer Sohn, Ingelheim.

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round and round and round she goes but when she eats, nobody knows.

MYADEC helps correct vitamin-mineral deficiencies in people whose dietary habits are poor. Just one capsule daily supplies therapeutic potencies of nine important vitamins together with significant amounts of eleven essential minerals and trace elements.

Each MYADEC *Capsule contains:*

VITAMINS:

Vitamin B_{12} crystalline	5 mcg.
Vitamin B_2 (riboflavin)	10 mg.
Vitamin B_6 (pyridoxine hydrochloride)	2 mg.
Vitamin B_1 mononitrate	10 mg.
Nicotinamide (niacinsamide)	100 mg.
Vitamin C (ascorbic acid)	150 mg.
Vitamin A	(7.5 mg.) 25,000 units
Vitamin D	(25 mcg.) 1,000 units
Vitamin E (d-alpha-tocopheryl-acetate concentrate)	5 I.U.

MINERALS (as inorganic salts):

Iodine	0.15 mg.
Manganese	1.0 mg.
Cobalt	0.1 mg.
Potassium	5.0 mg.
Molybdenum	0.2 mg.
Iron	15.0 mg.
Copper	1.0 mg.
Zinc	1.5 mg.
Magnesium	6.0 mg.
Calcium	105.0 mg.
Phosphorus	80.0 mg.

Bottles of 30, 100, 250, and 1,000

PARKE, DAVIS & COMPANY
DETROIT 32, MICHIGAN

MYADEC®
high potency vitamin-mineral formula



for prevention of

angina attacks

more effective than vasodilators alone

Miltrate*

MILTOWN* + PETN

The long-acting nitrate, PETN, helps maintain normal myocardial metabolism while Miltown relieves fear, anxiety and tension. As a result, Miltrate controls both physical and emotional causes of angina attacks.



Miltrate increases exercise tolerance

- reduces nitroglycerin dependence
- is notably safe for prolonged use
- provides convenient one-tablet dosage

Supplied: Bottles of 50 tablets.

Each tablet contains: 200 mg. Miltown + 10 mg. pentaerythritol tetranitrate.

Usual dosage: 1 or 2 tablets q.i.d. *before meals* and at bedtime. Dosage should be individualized.

References:

1. Shapiro, S.: Observations on the use of meprobamate in cardiovascular disorders. Angiology 8:504, Dec. 1957.
2. Friedlander, H. S.: The role of ataraxics in cardiology. Am. J. Cardiol. 1:395, March 1958.
3. Eskwith, I. S.: The holistic approach to angina pectoris. Am. Heart J. 55:621, April 1958.

WALLACE LABORATORIES, *New Brunswick, N. J.*

*TRADE-MARK

CML-7613-19



What's Your Verdict?

Edited by Ann Ledakowich, Member of the Bar of New Jersey

A physician was named defendant in a libel action commenced by a former patient for the publication of a letter containing allegedly false and defamatory matter.

In the course of the trial, the physician testified that he had received a request for information from a doctor writing on behalf of the parents of a girl who was keeping company with the patient. The physician checked his records and discovered the subject had been his patient seven years prior. The patient had been having marital difficulties and, at the request of of his then wife, had gone to the physician.

The physician complied with the doctor's request in a letter containing derogatory information concerning the patient's mental condition, his difficulties in school and constant trouble with the authorities, and his poor handling of finances. The letter was relayed by the doctor to the parents and they in turn delivered it to their daughter. As a result, the parents became violently opposed to their daughter's marriage, and they disowned her when she nevertheless married the patient.

The physician concedes that, as a physician, he is obliged not to reveal information obtained in confidence in the diagnosis or treatment of his patient. Thus the patient is encouraged to make a full disclosure of all facts which may bear upon his treatment. However, where there is a sufficiently important interest to protect, the physician's responsibility to keep confidence may be outweighed by a higher duty to reveal information even though it is defamatory and may prove to be false. In such instance there arises a conditional privilege under which the physician may make a disclosure reasonably necessary to protect such interest.

The patient contends that the physician was guilty of indiscretion. Conceding a conditional privilege existed for the protection and benefit of his present wife, a more direct method of supplying her with information should have been used. Though others had made the inquiry in her interest, they acted only as intermediaries, and no privilege existed for their purpose.

The physician was further guilty of indiscretion in reporting as certain facts which were based upon skimpy, unverified information obtained during treatment seven years ago. Many of these facts were derived from a prejudicial and questionable source, namely an unhappy wife of a blighted marriage.

The jury was instructed that the physician had a conditional privilege to make the statements, and a verdict was returned in his favor. On appeal by the patient, how would you decide?

Answer on page 245a

PMB-200

"Premarin" with Meprobamate

Each tablet contains 0.4 mg. "Premarin," 200 mg. meprobamate.

PMB ("Premarin" with Meprobamate) is an ideal preparation when the patient needs extra relief from anxiety and tension during the menopause. Once these symptoms are under control, therapy may be continued with "Premarin" alone.

Simple to prescribe as merely PMB



Supply: No. 880, PMB-200, bottles of 60 and 500.

Also available No. 881, PMB-400 ("Premarin" 0.4 mg. with meprobamate 400 mg.), bottles of 60 and 500.

Ayerst

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5827 "Premarin"=conjugated estrogens (equine) Meprobamate, licensed under U.S. Pat. No. 2,724,720

the next two patients
that you see
with biliary dysfunction
can demonstrate to you
the effectiveness of
NEOCHOLAN
in relieving

flatulence and belching
intestinal atony
indigestion
chronic constipation

Neocholan® greatly increases the flow of thin, nonviscid bile and corrects biliary stasis by flushing the biliary system. It also acts as a smooth muscle relaxant, resulting in an unimpeded flow of bile and pancreatic juices into the small intestine.

Each Neocholan tablet contains:

Dehydrocholic Acid Compound	250 mg.
Homatropine methylbromide	1.2 mg.
Phenobarbital	8.0 mg.

Bottles of 100 tablets.



PITMAN-MOORE COMPANY
P. O. Box 1656, Indianapolis 6, Indiana

Please send me, without charge, two clinical packages of Neocholan.



M.D.

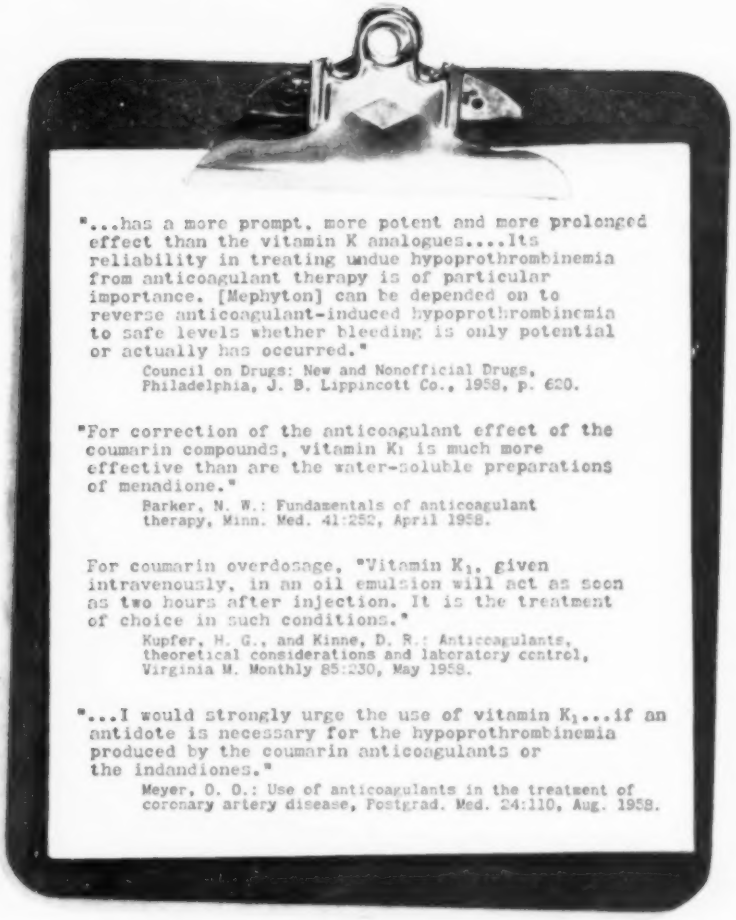
ADDRESS

CITY STATE

MT

Consensus:
The preferred antidote for anticoagulant-induced hypoprothrombinemia is 'Mephyton' (vitamin K_1).





"...has a more prompt, more potent and more prolonged effect than the vitamin K analogues....Its reliability in treating undue hypoprothrombinemia from anticoagulant therapy is of particular importance. [Mephyton] can be depended on to reverse anticoagulant-induced hypoprothrombinemia to safe levels whether bleeding is only potential or actually has occurred."

Council on Drugs: New and Nonofficial Drugs, Philadelphia, J. B. Lippincott Co., 1958, p. 620.

"For correction of the anticoagulant effect of the coumarin compounds, vitamin K_1 is much more effective than are the water-soluble preparations of menadione."

Barker, N. W.: Fundamentals of anticoagulant therapy, Minn. Med. 41:252, April 1958.

For coumarin overdosage, "Vitamin K_1, given intravenously, in an oil emulsion will act as soon as two hours after injection. It is the treatment of choice in such conditions."

Kupfer, H. G., and Kinne, D. R.: Anticoagulants, theoretical considerations and laboratory control, Virginia M. Monthly 85:230, May 1958.

"...I would strongly urge the use of vitamin K_1...if an antidote is necessary for the hypoprothrombinemia produced by the coumarin anticoagulants or the indandiones."

Meyer, D. O.: Use of anticoagulants in the treatment of coronary artery disease, Postgrad. Med. 24:110, Aug. 1958.

chemically identical with naturally-occurring vitamin K_1

Mephyton®

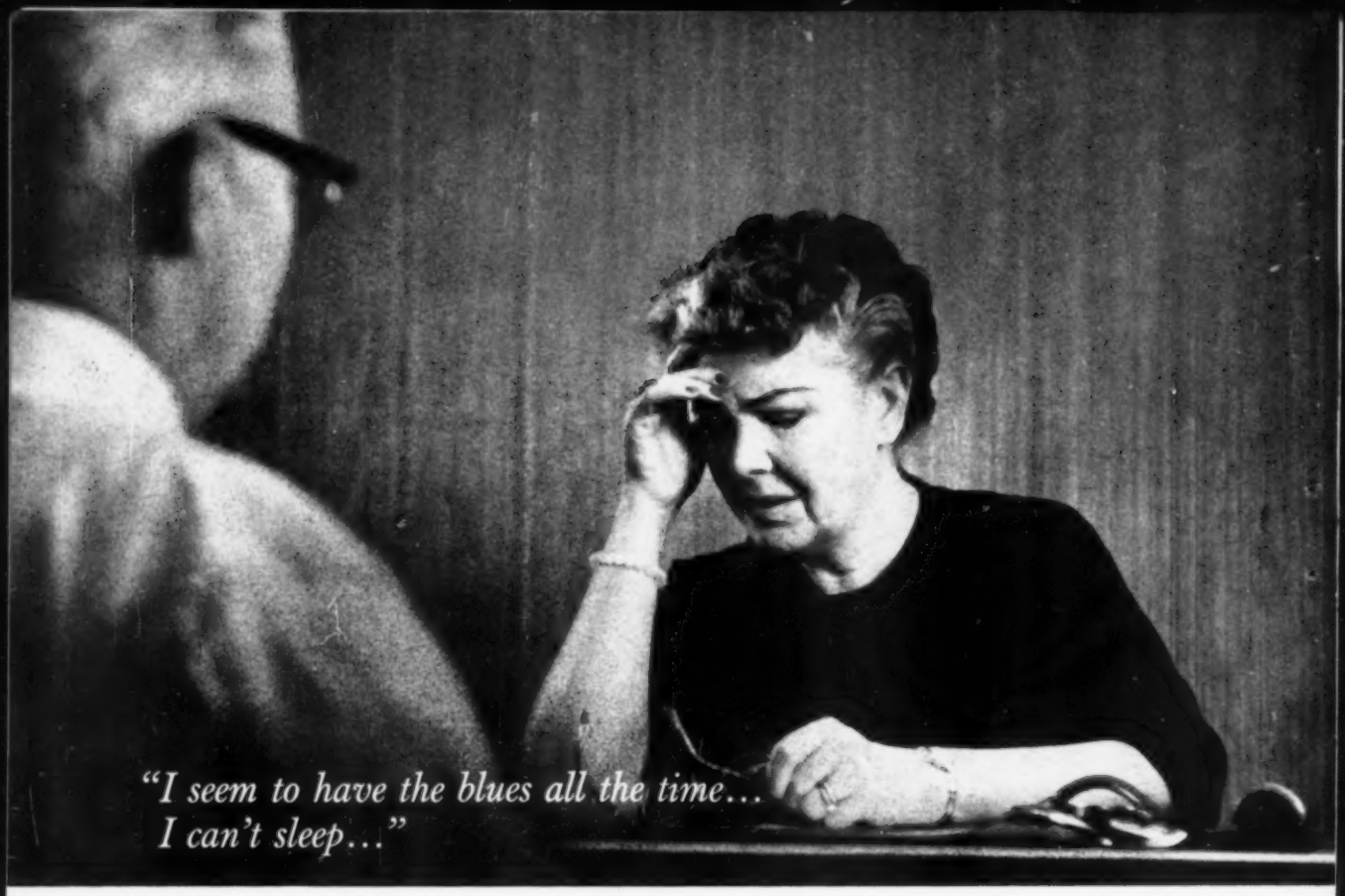
Vitamin K_1

Dosage: Orally, to modify anticoagulant effects: 5 to 10 mg. initially; 15 to 25 mg. for more vigorous action. Intravenously, for anticoagulant-induced bleeding emergencies, 10 to 50 mg.; may be repeated as indicated by prothrombin time response. (Some clinicians advise their patients to keep a supply of tablets on hand at all times; if gross bleeding occurs, the patients are instructed to take 10 mg. and phone the doctor.)

Supplied: Tablets, 5 mg.; bottles of 100. Emulsion, each 1-cc. ampul contains 50 mg.; boxes of 6 ampuls.

MEPHYTON is a trademark of Merck & Co., Inc.

MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.



in the depressed, unhappy patient

PROMPTLY IMPROVES MOOD

without excitation

- **Acts fast to relieve depression and its common symptoms:** sadness, crying, anorexia, listlessness, irritability, rumination, and insomnia.
- **Restores normal sleep**—without hang-over or depressive aftereffects. Usually eliminates need for sedative-hypnotics.

EFFICACY AND SAFETY CONFIRMED IN OVER 3,000 DOCUMENTED CASE HISTORIES.[1, 2, 3]



Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

Composition: Each light-pink, scored tablet contains 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate.

▲Deprol▲†

References:

1. Alexander, L.: J.A.M.A. 166:1019, March 1, 1958.
2. Current personal communications; in the files of Wallace Laboratories.
3. Pennington, V.M.: Am. J. Psychiat. 115:250, Sept. 1958.

®WALLACE LABORATORIES, *New Brunswick, N. J.*

†TRADE-MARK

63-8613



AFTER HOURS

Photographs with brief description of your hobby will be welcomed. A beautiful imported German apothecary jar will be sent to each contributor.

FISHING

Living and practicing in a small town of central Idaho offers much to the physician who loves to fish. When time permits, the main question is which way to go and what to fish for. During the winter months when the small streams and lakes are closed we are not without some of the best game fishing to be found anywhere in the U.S.A. Our town is situated equidistant between the Salmon River and the Clearwater River. Forty-five minutes from home either way will place one at the river's edge ready to try his luck for the world's scrappiest and best-eating fish, the Mighty Steel Head, or in other words, an ocean-going rainbow trout. These fish return to their native streams from the ocean to spawn. The fall run begins in September and lasts until March or whenever the spring thaws raise and rile the rivers. They will measure up to 36 inches and will weigh up to 15 or more pounds. We use spinning gear, with light line, usually 6-8-10 pound test. For lures—the usual wobble spoons, salmon eggs or even worms.

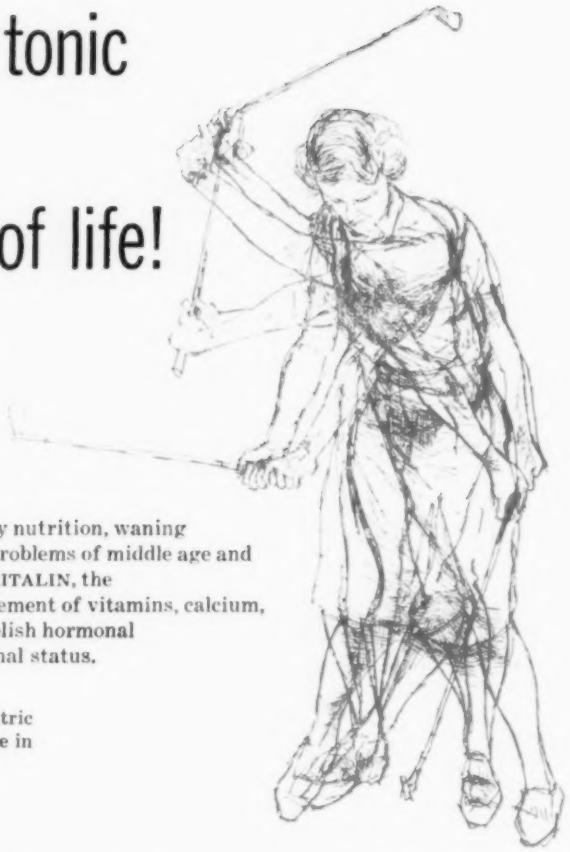
RALPH M. BUTTERMORE, M.D.
Grangeville, Idaho



The Salmon River Steel Head which Dr. Buttermore is holding was caught last New Year's Day in a snow storm. It was 30 inches long, and weighed about 10 pounds.

Editor's note: This chill setting is quite different from our cover scene. Evidently Dr. Buttermore sets no seasonal limits on his hobby!

New revitalizing tonic brightens the second half of life!



Ritonic™

A sense of frustration and inadequacy, faulty nutrition, waning gonadal function – RITONIC meets all these problems of middle age and senile let-down. The unique combination of RITALIN, the *safe* central stimulant, with a balanced complement of vitamins, calcium, and hormones acts to renew vitality, re-establish hormonal and anabolic benefits, and improve nutritional status.

"We found Ritonic to be a safe, effective geriatric supplement . . ."[1] "Patients reported an increase in alertness, vitality and sense of well being."[2]

PRESCRIBE RITONIC

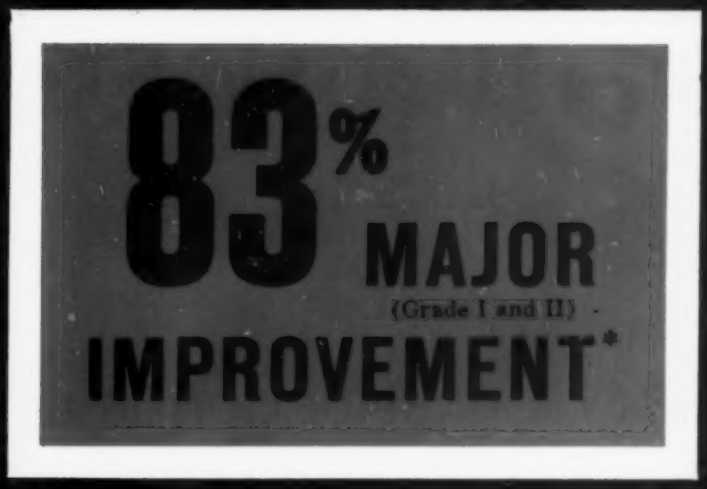
for your geriatric patients, your middle-aged patients and your postmenopausal patients.

Each Ritonic Capsule contains:

Ritalin® hydrochloride	5 mg.
methyltestosterone	1.25 mg.
ethinyl estradiol	5 micrograms
thiamin (vitamin B_1)	5 mg.
riboflavin (vitamin B_2)	1 mg.
pyridoxin (vitamin B_6)	2 mg.
vitamin B_{12} activity	2 micrograms
nicotinamide	25 mg.
dicalcium phosphate	250 mg.

Dosage: One Ritonic Capsule in mid-morning and one in mid-afternoon.
Supplied: Ritonic CAPSULES; bottles of 100.
References: 1. Natenshon, A. L.: J. Am. Geriatrics Soc. *6*: 534 (July) 1958.
2. Bachrach, S.: To be published.
RITALIN® hydrochloride (methylphenidate hydrochloride CIBA)

C I B A SUMMIT, N. J.



in Rheumatoid Arthritis

*Using combined drug therapy with PLAQUENIL® or Aralen® as maintenance therapy. With Plaquenil or Aralen alone 62% grade I and II improvement. (Scherbel, A.L.; Harrison, J.W., and Atdjian, Martin: Cleveland Clin. Quart. 25:95, April, 1958. Report on 805 patients with rheumatoid arthritis or related diseases.)

Reasons for Failure:

1. Treatment discontinued too soon (percentage of patients improved increases substantially after first six months).
2. Patients in relapse after prolonged steroid therapy are resistant to Plaquenil or Aralen treatment for several months.

Plaquenil sulfate is supplied in tablets of 200 mg., bottles of 100.

Dose: Initial — 400 to 600 mg. (2 or 3 tablets) daily.
Maintenance — 200 to 400 mg. (1 or 2 tablets) daily.

Write for Booklet.

Aralen (brand of chloroquine) and Plaquenil (brand of hydroxychloroquine), trademarks reg. U.S. Pat. Off.

Winthrop Laboratories
New York 18, N. Y.



in the 5th, 6th and 7th decades of life...

Biliary Constipation is a common complaint*

3-way action physiologic

CHOLERETIC
DIGESTANT
LAXATIVE

for treating the causes and symptoms of biliary constipation

Because biliary stasis is commonly an underlying cause of constipation, Caroid and Bile Salts Tablets provide bile salts to stimulate the secretion and flow of hepatic bile. They also contain Caroid, a potent enzyme, that increases protein digestion by as much as 15%, and mild stimulant laxatives to improve peristaltic rhythm and tone.

This three-way action works promptly and effectively to relieve such common symptoms as distention, eructation, flatulence, and helps to restore the normal pattern of elimination without cramping or griping.

*Gauss, H.: Biliary Constipation, Am. J. Digest. Dis. *10*:141 (April) 1943

Caroid® and Bile Salts Tablets

RESTORE REGULARITY WITHOUT IRRITATION, GRIPING, OR FLATULENCE

SAMPLES ON REQUEST

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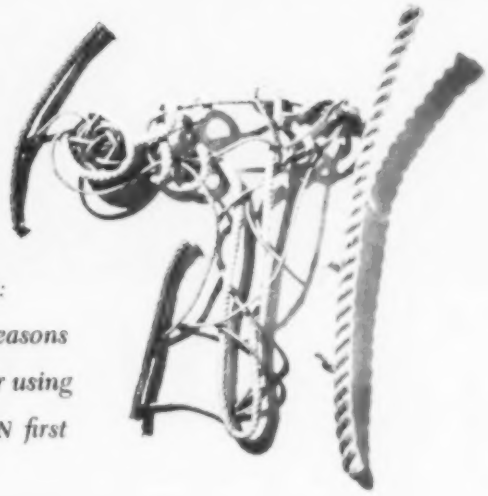
pyelonephritis

"the most important concept is that it is a tubular disease"[1]

FURADANTIN®

brand of nitrofurantoin

a most important characteristic: effective at the tubular level



in each patient:
2 million reasons
for using
FURADANTIN first

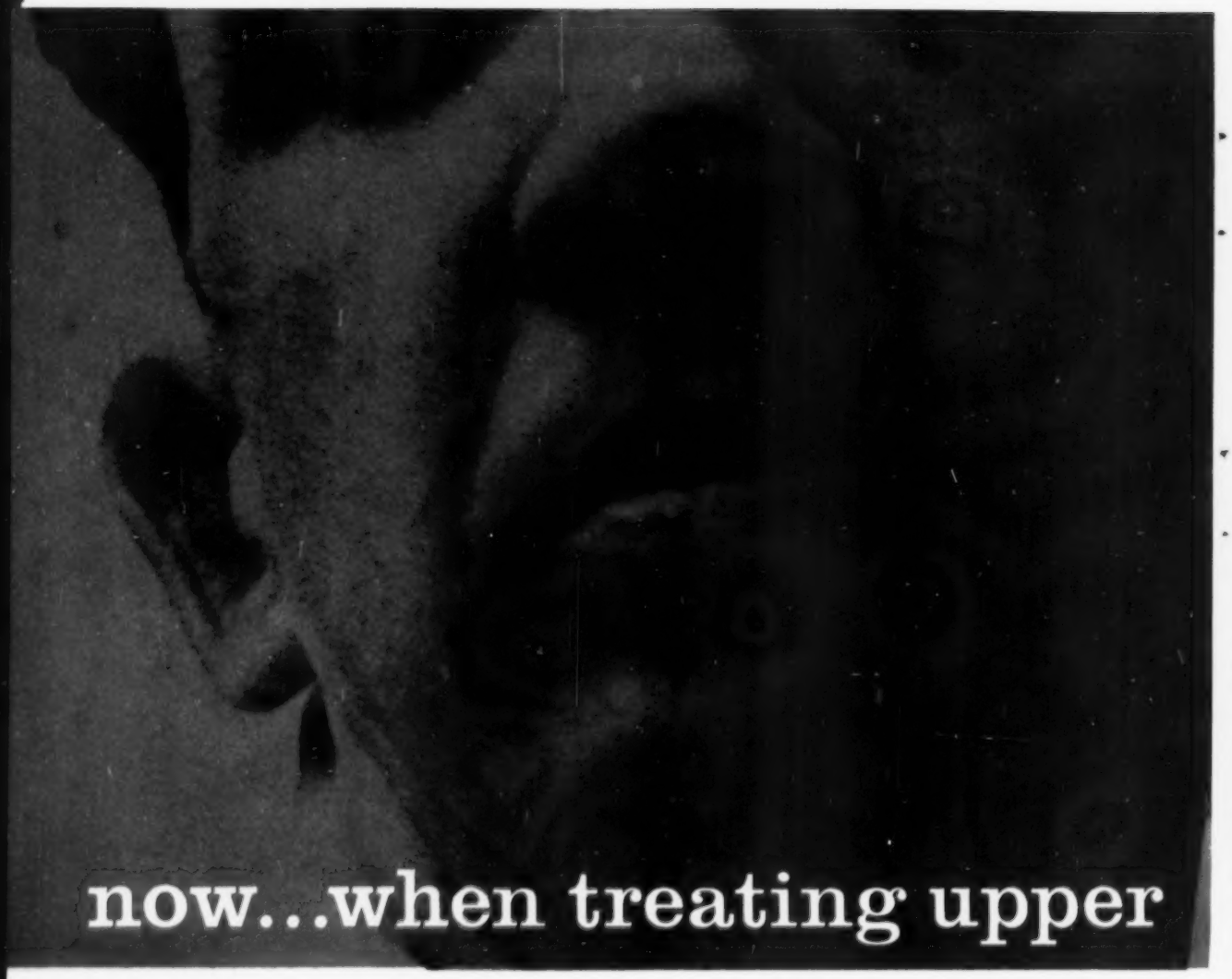
In addition to simple glomerular filtration, FURADANTIN is actively excreted by the cells of the tubules. A significant and singular characteristic of FURADANTIN, it is but one reason why "the protracted administration of nitrofurantoin [FURADANTIN] to patients with ineradicable urinary tract infection, particularly chronic pyelonephritis without demonstrable obstruction, may usefully complement the medical management of this difficult problem."[2]

Available as Tablets, 50 and 100 mg.; Oral Suspension, 25 mg. per 5 cc. tsp.

References: 1. Smith, I. M., and Lenyo, L.: Am. Practitioner 9:78, 1958. 2. Jawetz, E., et al.: A.M.A. Arch. Int. M. 100:549, 1957.

NITROFURANS—a *unique* class of antimicrobials—neither antibiotics nor sulfonamides

EATON LABORATORIES, NORWICH, NEW YORK



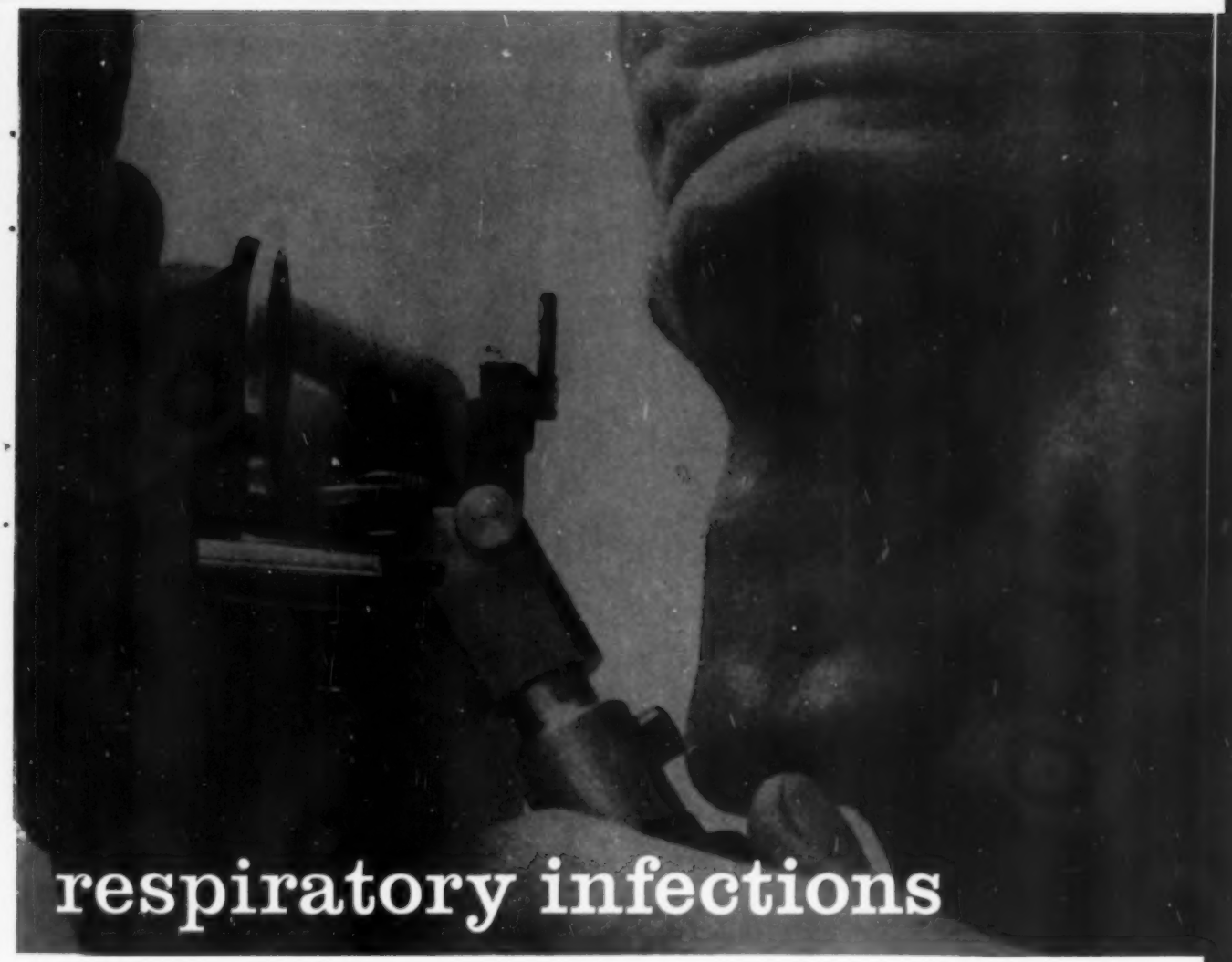
now...when treating upper

Madribon

Disease	No. of Patients	Response: Good or Excellent	Response: Poor
Otitis media	72	65	7
Bronchitis	11	10	1
Obstructive laryngotracheitis	3	3	0
Tonsillitis	21	18	3
Cervical adenitis	13	13	0
Purulent rhinitis or sinusitis	19	16	3
Total	139	125	14

From a study by E. H. Townsend and A. Bingstedt[1]

safe "No side reactions to sulfadimethoxine were observed in the entire series of 167 patients."[1] **effective** "Remarkable improvement, characterized by subjective relief and disappearance of inflammatory symptoms, occurred in 107 out of the 111 patients under study."[2] **economical** "In addition to the clinical efficiency attributable to sulfadimethoxine . . . the economy involved in medication with a fast-acting chemotherapeutic agent warrants its early use. . . ."[3]



The fastest growing antibacterial bibliography:

1. E. H. Townsend and A. Borgstedt, *Antibiotics Annual 1958-1959*, in press. **2.** J. C. Elia, *Antibiotic Med. & Clin. Therapy*, 6: (Suppl. 1), 1959. **3.** B. H. Leming, Jr., C. Flanigan, Jr. and B. R. Jennings, *Antibiotic Med. & Clin. Therapy*, 6:(Suppl. 1), 1959. **4.** H. P. Ironson and C. Patel, *Antibiotic Med. & Clin. Therapy*, 6: (Suppl. 1), 1959. **5.** S. Ross, J. R. Puig and L. A. Zaremba, *Antibiotics Annual 1958-1959*, in press. **6.** J. D. Young, Jr., W. S. Kiser and O. C. Beyer, *Antibiotic Med. & Clin. Therapy*, 6:(Suppl. 1), 1959. **7.** T. D. Michael, *Antibiotic Med. & Clin. Therapy*, 6: (Suppl. 1), 1959. **8.** W. A. Leff, *Antibiotic Med. & Clin. Therapy*, 6:(Suppl. 1), 1959. **9.** B. A. Koechlin, W. Kern and R. Engelberg, *Antibiotic Med. & Clin. Therapy*, 6:(Suppl. 1), 1959. **10.** R. J. Schnitzer and W. F. DeLorenzo, *Antibiotic Med. & Clin. Therapy*, 6:(Suppl. 1), 1959. **11.** R. J. Schnitzer, W. F. DeLorenzo, E. Grunberg and R. Russomanno, *Proc. Soc. Exper. Biol. & Med.*, 99:421, 1958. **12.** W. F. DeLorenzo and R. Russomanno, *Antibiotic Med. & Clin. Therapy*, 6:(Suppl. 1), 1959. **13.** B. Fust and E. Boehni, *Antibiotic Med. & Clin. Therapy*, 6:(Suppl. 1), 1959. **14.** W. F. DeLorenzo and A. M. Schumacher, *Antibiotic Med. & Clin. Therapy*, 6:(Suppl. 1), 1959. **15.** W. P. Boger, *Antibiotics Annual 1958-1959*, in press. **16.** O. Brandman, C. Oyer and R. Engelberg, *J. M. Soc. New Jersey*, 56:24, Jan. 1959. **17.** J. F. Glenn, J. R. Johnson and J. H. Semans, *Antibiotic Med. & Clin. Therapy*, 6:(Suppl. 1), 1959.

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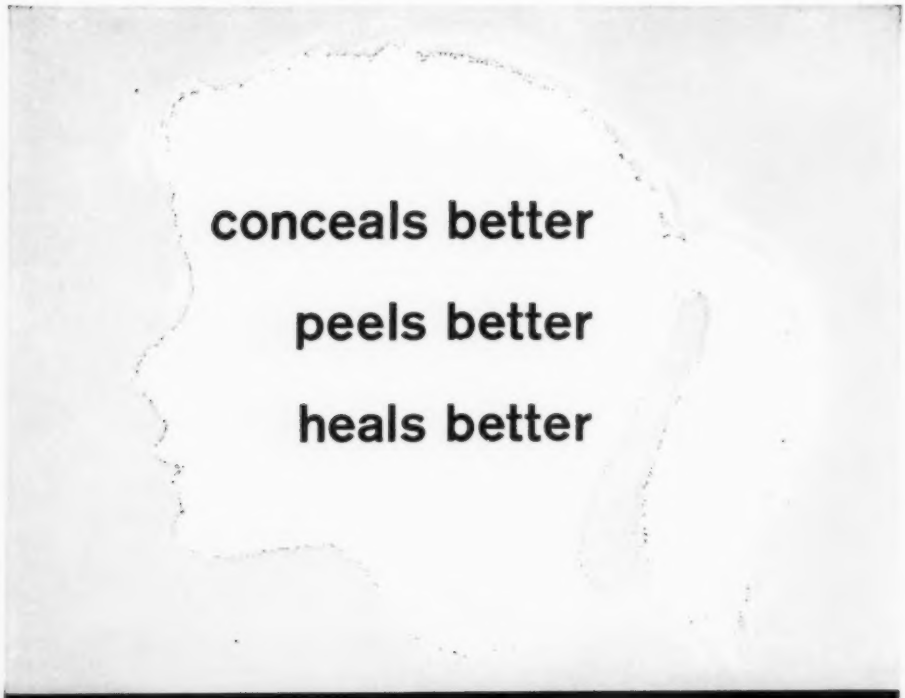
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125-mg capsules of Madribon

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DESITIN® ACNE cream

- conceals acne lesions with a skin harmony not achieved before — no medicated or mask-like look.
- anti-seborrheic, gently keratolytic, reduces excess oiliness without irritation. Combats secondary infection.
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Combines colloidal sulfur, resorcinol, zinc oxide and hexachlorophene in a flesh-tinted, quick-drying, cosmetically elegant and superior base. Pleasant to use, greaseless.

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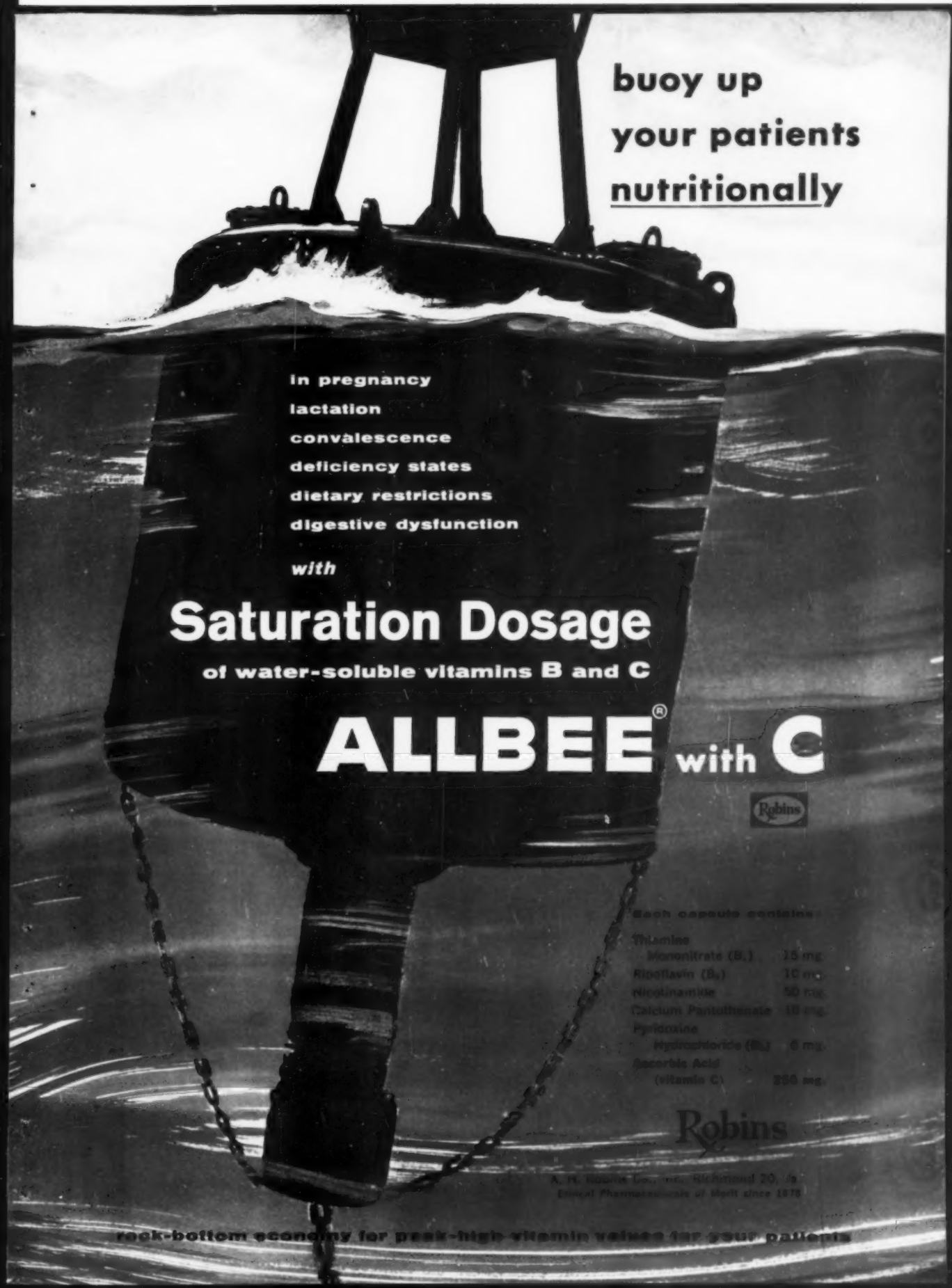
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812 Branch Avenue, Providence 4, R. I.

1. Bleiberg, J.: J. Med. Soc. New Jersey, Aug. 1957.

2. Weissberg, G.: Clinical Medicine, Feb. 1958.

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your patients
nutritionally
in pregnancy
lactation
convalescence
deficiency states
dietary restrictions
digestive dysfunction
with
Saturation Dosage
of water-soluble vitamins B and C
ALLBEE® with C
Robins
Each capsule contains:
Thiamine Mononitrate (B1) 15 mg.
Riboflavin (B2) 10 mg.
Nicotinamide 50 mg.
Calcium Pantothenate 10 mg.
Pyridoxine Hydrochloride (B6) 5 mg.
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Robins
A. H. Robins Co., Inc., Richmond 20, Va.
Ethical Pharmaceuticals of Merit since 1878
rock-bottom economy for peak-high vitamin values for your patients



Everything seems normal, but that "I just fall apart in the afternoon" may indicate a common subclinical anemia, or even an early pernicious anemia. For any phase or any type, marginal to manifest, consider one of the new Lederle hematinic formulations, PERIHEMIN, PRONEMIA or FALVIN. All provide the new form of iron, ferrous fumarate (fewer g.i. reactions and fully efficient) plus AUTRINIC Intrinsic Factor Concentrate, producing higher B_{12} serum levels.

Three formulas permit dosage flexibility

Each capsule contains:	PERIHEMIN 3 DAILY	PRONEMIA 1 DAILY	FALVIN 2 DAILY
Vitamin B_{12} with AUTRINIC® Intrinsic Factor Concentrate	2 3 U.S.P. Oral Unit	2 U.S.P. Oral Units	1 U.S.P. Oral Unit
Ferrous Fumarate	168 mg.	350 mg.	271 mg.
Iron (as Fumarate)	55 mg.	115 mg.	90 mg.
Ascorbic Acid (C)	30 mg.	150 mg.	75 mg.
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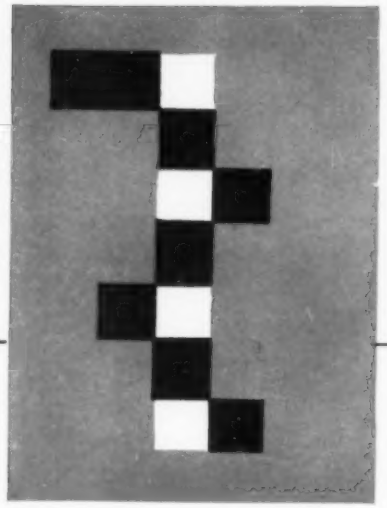
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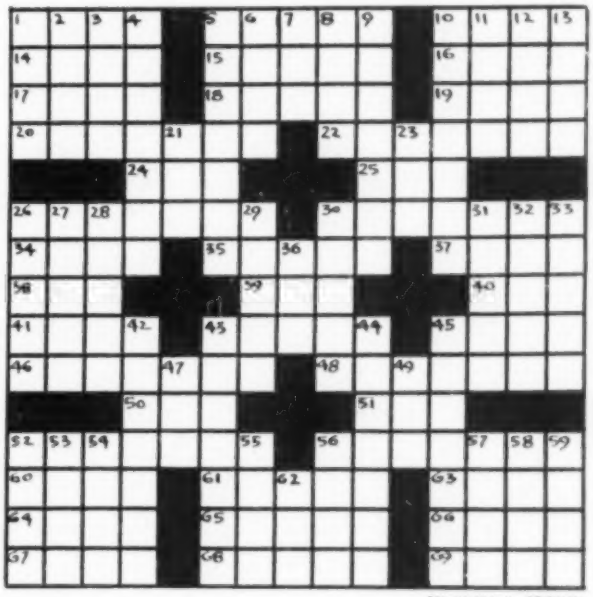
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Medical Teasers

A challenging crossword puzzle for the physician

(Solution on page 241a)



BY ALAN A. BROWN

ACROSS

1. Roster of items
5. Swelling
10. A ridge in stomach
14. Considered separately
15. Synthetic suture material
16. Enough (poet.)
17. Solidifying agent in culture medium
18. Author of "Robinson Crusoe"
19. Become exhausted
20. Always
22. Pained
24. Point at
25. Anger
26. Give access to again
30. Pain in the ear
34. Emmets (archaic)
35. Sac containing liquid or semisolid (pl.)
37. At that time
38. Animal doctor (colloq.)
39. A cheer
40. Iridium, sulfur (symbols)
41. Eject
43. Cast up from the stomach
45. Patron saint of sailors
46. Small hollow or depression (pl.)
48. Pertaining to the skull
50. Black, viscid liquid
51. First three vowels
52. Malposition
56. One who operates
60. Type of syringe
61. The mature ovum
63. Hand (Ital.)
64. Competent
65. Line (Lat.)
66. Skills
67. Urgent want
68. Entrances
69. Astringent fruit of the blackthorn

DOWN

1. Plant appendage
2. Character in Othello
3. Cicatrix
4. Used in sewing (pl.)
5. Disease confined to a particular region
6. One who dyes
7. A sprite
8. What a cow does
9. Deficiency in blood quality (pl.)
10. Retire
11. Single thing
12. To pierce with horns
13. Impressed with fear
21. Energy
23. Arranged (abbr.)
26. Separate into threads
27. Clyster
28. Part of tympanum above the atrium
29. Novices
30. In accordance with rules
31. Source of cayenne pepper
32. Prefix signifying Hermes
33. Specific solution containing enzymes
36. Man's name
42. Instructed
43. Smallpox
44. Wounds
45. Riddles
47. A short sleep
49. Unit of air pressure
52. Ardor
53. A solid with six equal sides
54. Far off (comb. form)
55. Greedy
56. Fat for tallow
57. Nobleman
58. Upon the top of
59. Olfactory organ
62. Suffix denoting a tribe



Fresh Sunkist Navel Oranges are wonderful "finger food." No seeds, easy to peel... great for youngsters to eat by themselves. Easy for mother to prepare, too.

In recommending oranges and orange juice for children...

Why is the word FRESH so important?

Science has found that many of the 50 known health values in the *fresh* orange exist mainly in the "meat" of the fruit.

For instance, whole fresh oranges provide much more of the important bio-flavonoids and protopectins than processed orange juice. And, of course, the *fresh* orange gives *all* the vitamin C, vitamin A, B vitamins and minerals in the fruit... and in their proper natural balance.

You want your young patients to have the best. In citrus, the best is fresh... fresh Sunkist citrus. Advise *fresh* strained orange juice for infant patients. As soon as they are old enough, advise whole fresh orange juice (with the health-filled solids left in) and whole fresh oranges.

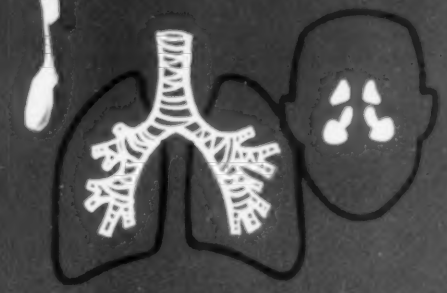
Sunkist Oranges

The Sunkist trade-mark on the fruit is a guarantee of the finest from California-Arizona.

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CHYMAR® Aqueous
Chymotrypsin

liquefies viscid mucus



in asthma, bronchitis, rhinitis and sinusitis

Chymar Aqueous was used as adjunctive therapy for 60 patients suffering from asthma, bronchitis, rhinitis or sinusitis. "In the majority (48) of these cases, improvement was demonstrated by easier breathing, improved vital capacity, thinning of bronchial secretions, ability to raise sputum more freely and a reduction in the amount of expectoration."[1] In 2 other studies, Chymar was used with good success in treating 45 cases of asthma.[2,3] Supplied in 5 cc. multiple dose vials with 5000 Armour Units per ml. Also available as Chymar in Oil. 1. Parsons, D. J.: *Clinical Medicine* 5:1491, 1958. 2. Dias, E. S.: *Revista de la Confederacion Medico Panamericana* 3:402, 1958. 3. Dias, E. S.: *Sinopsis Medica Internacional* 6:30 (March) 1958.

Chymar Aqueous is also preferred for systemic anti-inflammatory action in obstetrics, gynecology, dermatology, surgery, accidents and eye diseases.

ARMOUR

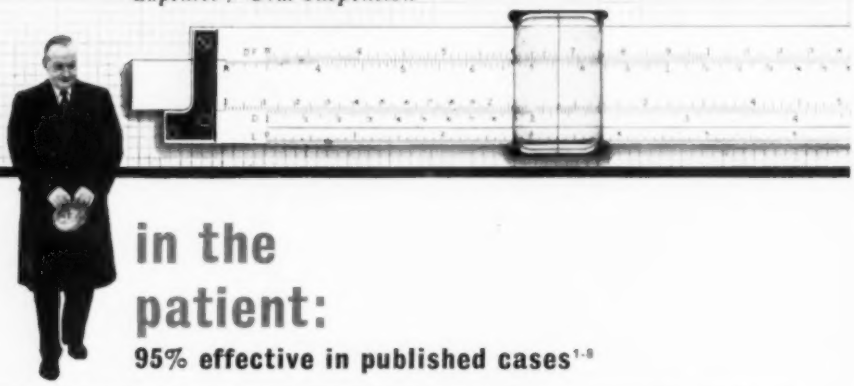
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PRONOUNCED TAY-O

℞ Tao* (triacetyloleandomycin)

Capsules / Oral Suspension

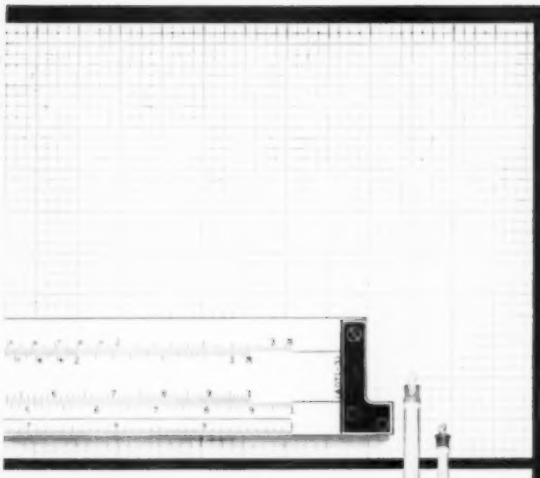
designed for superior control of common Gram-positive infections



in the patient:

95% effective in published cases[1-9]

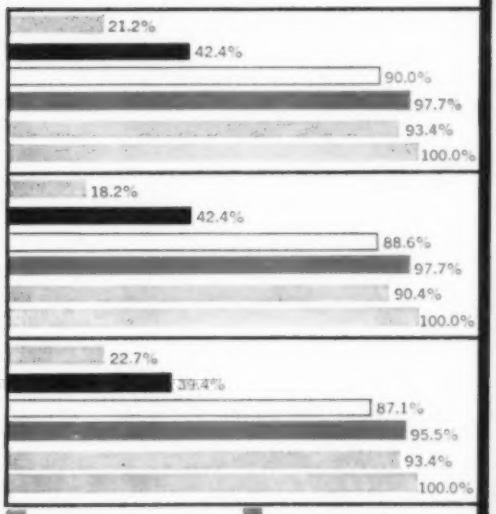
Conditions treated	No. of Patients	Cured	Improved	Failure
ALL INFECTIONS	**558**	**448**	**80**	**30**
Respiratory infections	**258**	**208**	**31**	**19**
Pharyngitis and/or tonsillitis	65	58	5	2
Pneumonia	90	66	17	7
Infectious asthma	44	38	–	6
Otitis media	31	29	2	–
Other respiratory (bronchitis, bronchiolitis, bronchiectasis, pneumonitis, laryngotracheitis, strep throat)	28	17	7	4
Skin and soft tissue infections	**230**	**191**	**38**	**1**
Infected wounds, incisions and lacerations	41	33	8	–
Abscesses	51	43	8	–
Furunculosis	58	51	6	1
Acne, pustular	43	28	15	–
Pyoderma	19	19	–	–
Other skin and soft tissue (infected burns, cellulitis, impetigo, ulcers, others)	18	17	1	–
Genitourinary infections	**28**	**19**	**3**	**6**
Acute pyelitis and cystitis	10	8	2	–
Urethritis with gonorrhea or cystitis	8	8	–	–
Pyelonephritis	4	1	–	3
Salpingitis	5	1	1	3
Pelvic inflammation with endometriosis	1	1	–	–
Miscellaneous (adenitis, enteritis, enterocolitis, subacute bacterial endocarditis, fever, hematoma, staphylococcus carriers, osteomyelitis, tenosynovitis, septic arthritis, acute bursitis, periarthritis)	42	30	8	4



in the laboratory:

over 90% effective against resistant staph

COMPARATIVE TESTS BY THREE METHODS (DISC, TUBE DILUTION, CYLINDER PLATE) ON 130 STAPHYLOCOCCI[9]



Percentage of organisms inhibited by the range of concentrations listed for each antibiotic.

Other Tao advantages:

Rapidly absorbed—stable in gastric acid,[7] TAO needs no retarding protective coating

Low in toxicity—freedom from side effects in 96% of patients treated; cessation of therapy is rarely required

Highly palatable—"practically tasteless"[7] active ingredient in a pleasant cherry-flavored medium.

Dosage and Administration: Dosage varies according to the severity of the infection. **For adults,** the average dose is 250 mg. q.i.d.; to 500 mg. q.i.d. in more severe infections. **For children** 8 months to 8 years, a daily dose of approximately 30 mg./Kg. body weight in divided doses has been found effective. Since TAO is therapeutically stable in gastric acid, it may be administered without regard to meals.

Supplied: TAO Capsules—250 mg. and 125 mg., bottles of 60. TAO for Oral Suspension—1.5 Gm., 125 mg. per teaspoonful (5 cc.) when reconstituted; unusually palatable cherry flavor; 2 oz. bottle.

References: 1. Koch, R., and Asay, L. D.: J. Pediat., in press. 2. Leming, B. H., Jr., et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 3. Mellman, et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 4. Olansky, S., and McCormick, G. E., Jr.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 5. Shubin, H., et al.: Antibiotics Annual 1957-1958, New York, N. Y., Medical Encyclopedia, Inc., 1958, p. 679. 6. Isenberg, H., and Karelitz, S.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 7. Wennersten, J. R.: Antibiotic Med. & Clin. Therapy 5:527 (Aug.) 1958. 8. Kaplan, M. A., and Goldin, M.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 9. Truant, J. P.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958.

Tao dosage forms—for specific clinical situations

Tao Pediatric Drops

For children—flavorful, easy to administer.

Supplied: When reconstituted, 100 mg. per cc. Special calibrated droppers—5 drops (approx. 25 mg.) and 10 drops (approx. 50 mg.). 10 cc. bottle.

Tao-AC (Tao analgesic, antihistaminic compound)

To eradicate pain and physical discomfort in respiratory disorders.

Supplied: In bottles of 36 capsules.

Taomid* (Tao with triple sulfas)

For dual control of Gram-positive and Gram-negative infections.

Supplied: Tablets, bottles of 60. Oral Suspension, bottles of 60 cc.

Intramuscular or Intravenous

For direct action—in clinical emergencies.

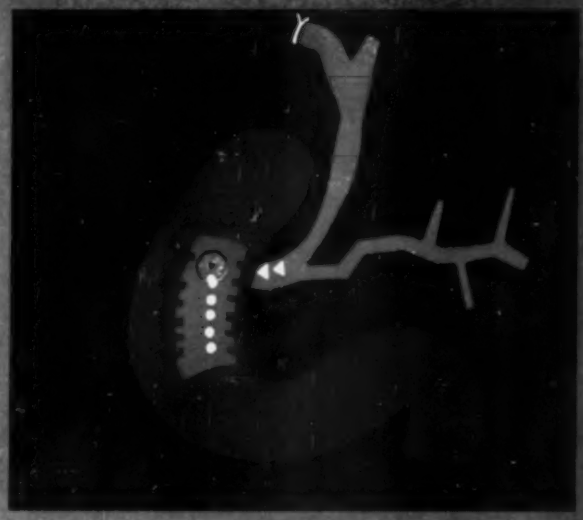
Supplied: In 10 cc. vials.

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How can the problem of "postcholecystectomy syndrome" be reduced?

A "routine" operative cholangiogram is now recommended in addition to thorough surgical exploration, reducing the number of cholecystectomized patients later presenting the same symptoms as before the operation.

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- corrects excessive bile concentration
- helps to thin gallbladder contents
- benefits patients with chronic cholecystitis, noncalculous cholangitis, and biliary dyskinesia

in functional G.I. distress... **DECHOLIN**® **with BELLADONNA**

- reliable spasmolysis
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available: DECHOLIN Tablets: (dehydrocholic acid, AMES) 3¾ gr. (250 mg.). Bottles of 100, 500 and 1,000; drums of 5,000.

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they just blow away!



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GREATER RELIEF
with longer-acting*

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*A single dose provides relief for as long as 12 hours.

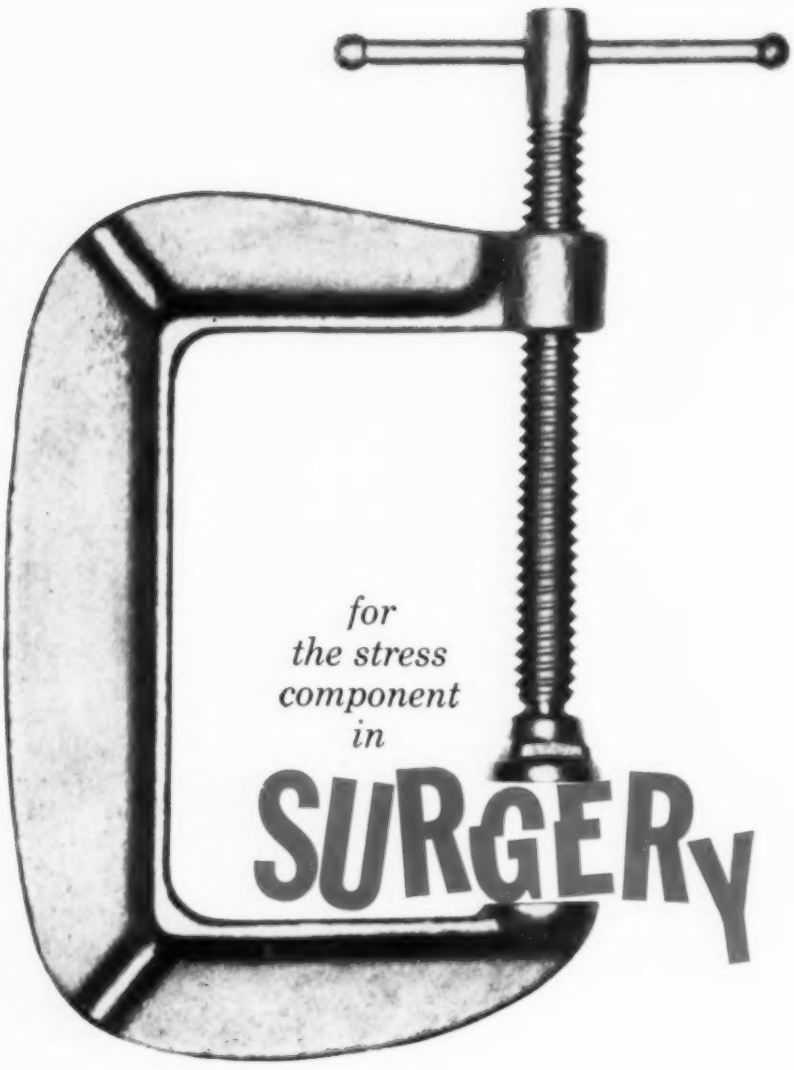
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Each LP tablet contains:
Phenylephrine hydrochloride..... 20 mg.
Chlorprophenpyridamine maleate. 4 mg.
Supplied in bottles of 50 and 250 tablets.

Usual dose: Two tablets, morning and evening. For mild cases (and children), 1 tablet. Occasional patients may require a third daily dose, which can be safely given.

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for an uneventful postoperative course

Adequate nutritional supplementation, pre- and postoperative, must be consistent with requirements for satisfactory healing and maintenance of homeostasis.[1,2] Therapeutic levels of B and C vitamins should be administered to meet the stress demands.[3] STRESSCAPS provide the high potency formula of water-soluble vitamins essential to an uneventful, early convalescence.

Each capsule contains:

Thiamine Mononitrate (B_1)	10 mg.
Riboflavin (B_2)	10 mg.
Niacinamide	100 mg.
Ascorbic Acid (C)	300 mg.
Pyridoxine HCl (B_6)	2 mg.
Vitamin B_{12}	4 mcgm.
Folic Acid	1.5 mg.
Calcium Pantothenate	20 mg.
Vitamin K (Menadione)	2 mg.

Average dose: 1-2 capsules daily.

1. Kreiger, H., et al.: Surgery 44:138 (July) 1958.
2. Priestly, J. T.: Surg., Gynec. & Obstet. 107:375 (Sept.) 1958.
3. Goodhart, R. S.: M. Clin. North America 40:1473 (Sept.) 1956.

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Letters to the Editor

Reader reaction to the "new look" of MEDICAL TIMES started January 26, and is still continuing. Abstracts from some of the early letters appeared in the March issue, and we thought you might like to see a few more.

Enthusiastic

". . . . new format is far superior to your former excellent periodical. Easier reading — concise and eye-pleasing . . ."

L. GOLDMAN, M.D.
Trenton, N. J.

". . . The new TIMES was a real surprise. Wonderful change—articles good as always . . ."

G. J. STIVALA, M.D.
N.Y.C.

"I am enjoying the new format of MEDICAL TIMES. Your article on *Current Thinking on Hypertension* was very interesting. Are you presenting any papers on Asthma in the near future?"

E. R. WARE, M.D.
Fredericksburg, Va.

• *"Sum-mer" coming along.*

". . . new format definitely lends itself to increased readability . . ."

A. I. DOKTORSKY, M.D.
Chicago, Ill.

". . . MEDICAL TIMES has always been good and now is still better . . . only medical journal I really read . . ."

ARTHUR BAMBERGER, M.D.
N.Y.C.

"Like a ray of sunshine after a long gray murky dawn . . ."

H. R. SEIDENSTEIN, M.D.
New Rochelle, N. Y.

". . . new format is excellent. Particularly outstanding was your choice of material for publication in the January issue . . ."

S. B. WILLARD, M.D.
Doylestown, Pa.

"I went through the new issue without intending to. I think it is an excellent presentation and well balanced. With the arresting format it appears that MEDICAL TIMES will be arrested in its trip to the waste basket and at least given a second chance although there are still entirely too many throw-away journals. Each new one only increases the urge to dump the whole mess in the basket unopened."

JOHN M. ROBINSON, M.D.
Wooster, O.

• *Thank goodness M.T. has a chance!*

". . . I find it most interesting, exceptionally easy to read, especially late at night. I have decided to keep it, and others to follow, in my permanent library . . ."

N. A. GOLDSTEIN, M.D.
Flushing, N. Y.

Continued on page 76a

in hypertension— first rule out pheochromocytoma

Readily performed in the office unassisted, the reliable diagnostic test for pheochromocytoma with Regitine should be routine in hypertension. A potent antiadrenergic, Regitine is also valuable therapeutically in hypertensive crises and in peripheral vascular disease. A concise, illustrated booklet, THE TEST WITH REGITINE FOR PHEOCHROMOCYTOMA, is available at no charge. For your copy write: Medical Service Division, CIBA, Summit, New Jersey. SUPPLIED: *Ampuls* (for intramuscular or intravenous use in diagnosis), each containing 5 mg. Regitine methanesulfonate in lyophilized form. *Tablets* for oral administration (white, scored), each containing 50 mg. Regitine hydrochloride.

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Proper skin care is necessary at every age. However, it becomes vital when patients are suffering from dermatoses. At such times, as an adjunct, you will find TRIDENOL to be a thoroughly effective, clinically desirable, mildly scented, soothing, preparation for addition to the bath.

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TRIDENOL is highly effective for: Contact Dermatitis, Atopic Dermatitis, Senile Pruritus, Eczematoid Dermatitis, Dry Skin due to Diabetes, Soap Dermatitis, Diaper Rash, Pruritus due to temperature and cold weather changes.

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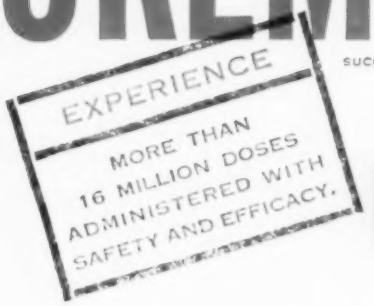
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regardless of etiology

MSD **MERCK SHARP & DOHME**
DIVISION OF MERCK & CO., Inc., PHILADELPHIA 1, PA.

CREMOMYCIN is a trademark of Merck & Co., Inc.

During her reproductive years— almost every woman needs iron therapy



The average woman loses 1 mg. of iron per day through normal elimination. Add to this an average of 15 to 30 mg. each menstrual period.[1] It is evident that many women deplete their iron reserves faster than the normal diet can replenish them.

Many clinicians recommend that every woman, during her reproductive years, receive iron therapy for six weeks each year.

Livitamin, with *peptonized* iron, offers an excellent formula to restore depleted iron reserves. Peptonized iron is well absorbed and stored, and less irritating than other forms. The Livitamin formula, which contains the B complex, provides integrated therapy to normalize the blood picture.

1. Brown, E.B., Jr. *The Management of Iron Deficiency Anemia*, GP, 2:87 (Feb. 1958).

LIVITAMIN®

with Peptonized Iron

FORMULA: Each fluidounce contains:

Iron peptonized (Equiv. in elemental iron to 71 mg.)	420 mg.
Manganese citrate, soluble	158 mg.
Thiamine hydrochloride	10 mg.
Riboflavin	10 mg.
Vitamin B_{12} Activity (derived from Cobalamin conc.)	20 mcg.
Nicotinamide	50 mg.
Pyridoxine hydrochloride	1 mg.
Pantothenic acid	5 mg.
Liver fraction 1	2 Gm.
Rice bran extract	1 Gm.
Inositol	30 mg.
Choline	60 mg.

The S. E. MASSENGILL Company

BRISTOL, TENNESSEE • NEW YORK • KANSAS CITY • SAN FRANCISCO

Livitamin
is better
because
it contains
peptonized
iron

current studies show peptonized iron*

- Absorbed as well as ferrous sulfate.
- Non-astringent.
- Free from tendencies to disturb digestion. (One-tenth as irritating to the gastric mucosa as ferrous sulfate.)
- More rapid response in iron-deficient anemias.
- One-third as toxic as ferrous sulfate.

*Keith, J.H.: Utilization and Toxicity of Peptonized Iron and Ferrous Sulfate, Am. J. Clin. Nutrition *1*:35 (Jan.-Feb., 1957).

LIVITAMIN®

with Peptonized Iron

The S. E. MASSENGILL Company BRISTOL, TENNESSEE • NEW YORK • KANSAS CITY • SAN FRANCISCO

Activates the appetite

quickly, effectively, pleasantly

FORMATONE®

Vitamin B Tonic

In FORMATONE, appetite-activating vitamins B_{12} and B_1 are augmented by:

sorbitol—markedly enhances absorption[1,2] of vitamin B_{12}.

pyridoxine (vitamin B_6)—aids in fat and protein metabolism.

These factors, plus a delicious sherry-wine base, all help activate appetites in your *geriatric*, *convalescent*, and *pediatric* patients with poor eating habits.



IVC

IVES-CAMERON COMPANY
Philadelphia 1, Pa.

1. Morgan, T.B. and Yudkin, J.: Nature *180*:543 (Sept. 14) 1957.
2. Greenberg, S.M., et al.: Nature *180*:1401 (Dec. 21) 1957.

Letters to the Editor

Continued from page 71a

". . . change is phenomenal . . . more colorful . . . much easier to read. Congratulations on a job well done . . ."

J. GAMBA, M.D.
Newark, N. J.

"The new MEDICAL TIMES really took me by surprise . . . has always been a very interesting journal, but new format is a post-graduate course and I believe it is the best medical journal in print . . . practical for the general practitioner. He needs down to earth information regarding the handling of his patients; not scientific data, such as statistics, percentages, and laboratory differentiations . . ."

JOSEPH BERTE, M.D.
Brooklyn, N. Y.

Cover Appeals

". . . first issue very impressive . . . My wife being a fine artist commented on how aesthetic your choice of covers has been . . ."

H. S. FELDMAN, M.D.
Livingston, N. J.

• *The editors are also impressed with the many cover paintings done for future issues by three of the nation's foremost illustrators—Dohanos, Brindle, and Ross.*

". . . We like it fine! Stay with it. Good issue and much more attractive cover — also like larger size . . ."

W. P. BRADLEY, JR., M.D.
Coraopolis, Pa.

". . ! like the artistic appeal as presented in the cover paintings. Many of these I will find suitable for framing . . ."

DR. WAYNE SHEPARD
Blanchard, La.

". . . Your idea of running an original painting by an outstanding artist on the cover — the painting dealing with some phase of the doctor's life or practice—is more than excellent! Congratulations! . . .

DR. S. M. KOZIOL
Chicago, Ill.

Impressive Financial News

". . . Easily and tirelessly readable . . . most articles have Abe Lincoln's 'Power of Condensed utterance.' Like business and economic articles especially, besides the splendid gems medically informative . . ."

JACK DELMORE, M.D.
Roseau, Minn.

". . . Congratulations . . . enjoy the timely medical articles . . . travel, financial news and general information help keep me posted in my busy practice . . ."

M. SHIPPS, M.D.
Media, Pa.

Not So Enthusiastic

". . . my wife's reaction was the exact one I had—*it's too heavy*. I invite your attention to an essay by J. B. S. Haldane, 'On Being the Right Size.' . . . Your new format is too, too big . . .

H. G. MOSS, M.D.
New Haven, Conn.

• *If it weren't heavy I'm afraid we couldn't afford to send it to you. Paper, printing, binding, and postage total $1.50 per copy, not including editorial cost or overhead. I would like to conform with J. B. S. Haldane's suggestion, but it can't be done in our present economy.*

Continued on page 82a

In Asthma

The Most Important Word to Remember...

Medihaler

automatically measured-dose aerosol medications

Nonbreakable • Shatterproof • Spillproof • Leakproof



Available with either epinephrine or isoproterenol

Medihaler-EPI

Epinephrine bitartrate, 7.0 mg. per cc., suspended in inert, nontoxic aerosol vehicle. Contains no alcohol. Each measured dose contains 0.15 mg. epinephrine.

Medihaler-ISO

Isoproterenol sulfate, 2.0 mg. per cc., suspended in inert, nontoxic aerosol vehicle. Contains no alcohol. Each measured dose contains 0.06 mg. isoproterenol.

NOTABLY SAFE AND EFFECTIVE FOR CHILDREN, TOO

Riker

NORTHRIDGE CALIFORNIA


ACHROM
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ACHROM



Tetracycline with Citric Acid *LEDERLE*

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



Just one prescription for Engran "Term-Pak" (270 TABLETS)
SQUIBB VITAMIN-MINERAL SUPPLEMENT
calling for one tablet a day will carry her through term to the six-week postpartum checkup. This means you are assured of a nutritionally perfect pregnancy, and she realizes major savings.*

SQUIBB *Squibb Quality — the Priceless Ingredient*

"ENGRAN," "TERM-PAK" AND "FLEXIDOSE" ARE SQUIBB TRADEMARKS



* *And when baby comes, specify* Engran baby drops — *full* vitamin support in *half the volume* of most similar preparations — lasts twice as long. Supplied in 15 cc. and 50 cc. bottles. Convenient 'Flexidose' Dropper assures accurate dosage.



a basic

BUTISOL

advantage

in anxiety-

tension

states . . .

Butisol safely, smoothly filters out the undesirable effects of everyday anxiety and tension—but leaves initiative and responsibility intact to meet the problems and complexities of daily life.

In a recent comparative evaluation of six widely used sedatives and tranquilizers, Butisol "was found to be the most effective sedative which will produce satisfactory daytime sedation...with minimal occurrence of untoward reactions."[1]

BUTISOL sodium®

butabarbital sodium

TABLETS • REPEAT-ACTION TABLETS • ELIXIR • CAPSULES

1. Grossman, A. J.; Batterman, R. C., and Leifer, P.: Federation Proc. *17*:373 (March) 1958.

McNEIL McNEIL LABORATORIES, INC. • PHILADELPHIA 32, PA.

Letters to the Editor

Continued from page 76a

"... did not recognize an old friend . . . new format does wonders for the advertising pages but I don't believe it adds much to the medical reading. The smaller edition was quite satisfactory to me . . ."

A. J. INGHAM, M.D.
Titusville, Pa.

"... liked the old style better for only one reason—I like to read in bed and the smaller issue was easier to handle. How indolent can you get??? . . ."

A. G. MCGILL, JR., M.D.
Bryon, Tex.

• *The editor can get awfully indolent!*

Yes, But

"The color in your cover was good, but it was a very prosaic type of painting. I would like to see some covers with a more modern art treatment . . ."

R. THOMPSON, M.D.
West Palm Beach, Fla.

• *Extensive preliminary testing indicated great majority* MEDICAL TIMES *readers preferred realism in art. This doesn't eliminate possibility some future covers may have that "modern" treatment.*

". . . Increase in size of type can help me. This error is often repeated in advertising and samples mailed to doctors . . ."

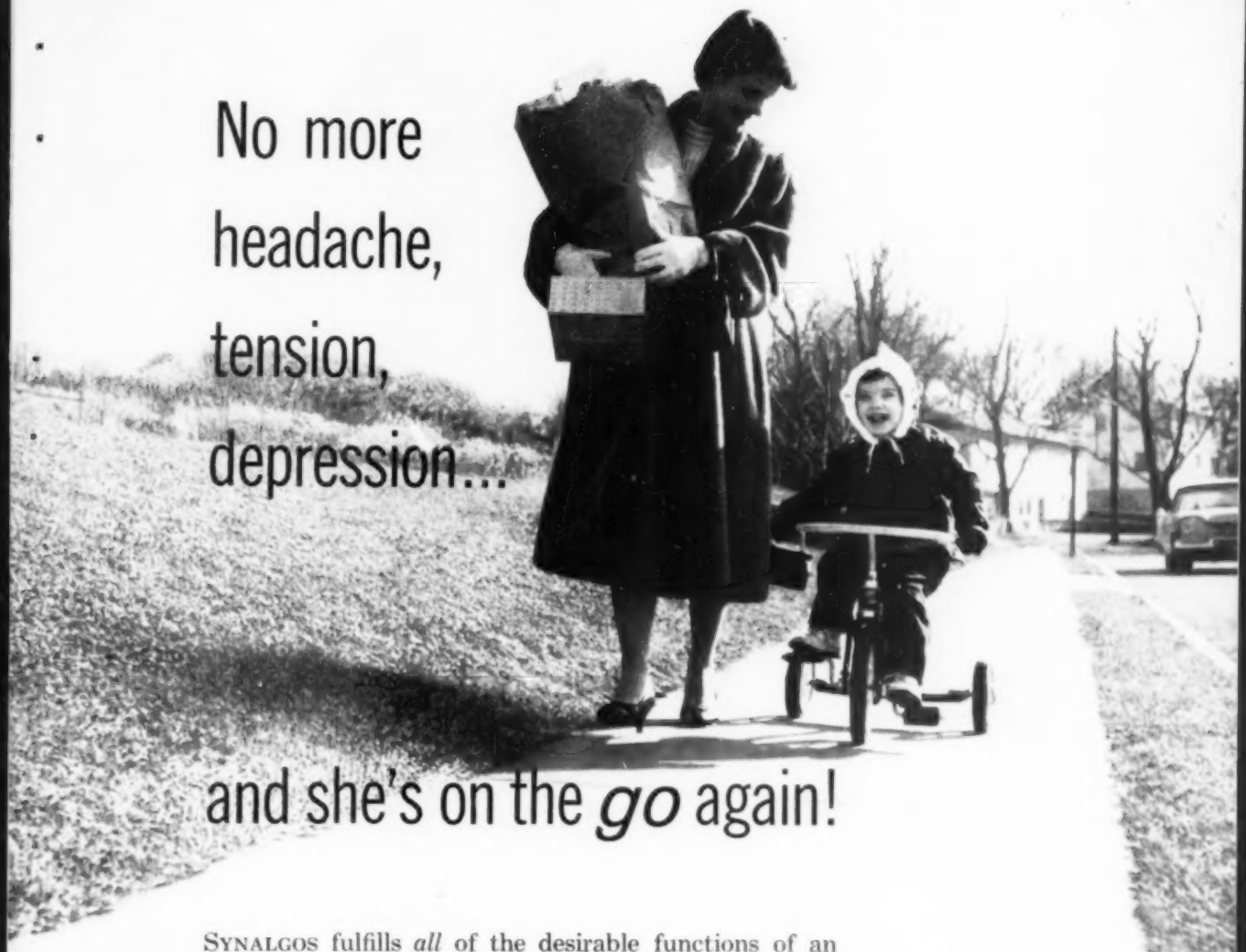
J. T. FULLER, M.D.
Newbern, Tenn.

• *We'll pass your comment along to the advertising people—It may help.*

• *Due to space limitations we could not publish all the letters received, and thus only a representative few reached print. All were read and deeply appreciated, however. If your letter was not published, you will find yourself in good company, as the following list shows.*

A. C. ADAMS, M.D., Beverly Hills, Calif.
H. H. ADAMS, M.D., Starke, Fla.
T. E. ADKINS, M.D., Rossville, Ga.
T. B. AFABLE, M.D., Chicago, Ill.
J. AGINS, M.D., Hollywood, Calif.
A. S. AHBEL, M.D., Canton, O.
W. K. ALLEN, M.D., Columbus, O.
L. F. ALLER, M.D., Snohomish, Wash.
I. A. ALLRED, Great Falls, Mont.
W. G. AMES, M.D., Essex, Conn.
W. E. ANDERSON, M.D., Clearbrook, Minn.
R. J. ANTOS, M.D., Phoenix, Ariz.
S. N. ARNSDORF, M.D., Chicago, Ill.
E. H. ASCHENBACH, M.D., Washington, D. C.
G. B. ATHY, M.D., Columbus, Kans.
W. M. ATKINS, M.D., Windsor, N. C.
A. B. BAGNER, M.D., Brooklyn, N. Y.
B. S. BAKER, M.D., Camden, N. J.
W. W. BALL, M.D., Corvallis, Ore.
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C. F. BANTIN, M.D., Omaha, Neb.
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D. N. BARBER, M.D., Charleston, W. Va.
D. G. BARTON, M.D., Concord, N. H.
T. H. BATES, M.D., Lake City, Fla.
L. BATLER, M.D., New York, N. Y.
E. BAUER, M.D., Pontiac, Mich.
I. R. BECK, M.D., Baltimore, Md.
A. M. BEEKLER, M.D., Santa Maria, Calif.

Continued on page 198a



SYNALGOS fulfills *all* of the desirable functions of an analgesic for mild to moderate pain. It provides quick, effective analgesia, eases tension, and counteracts depression.

SYNALGOS is especially indicated for sinus headache, tension headache, pain and headache of dysmenorrhea.

For severe pain, SYNALGOS-DC—SYNALGOS with dihydrocodeine—is recommended.

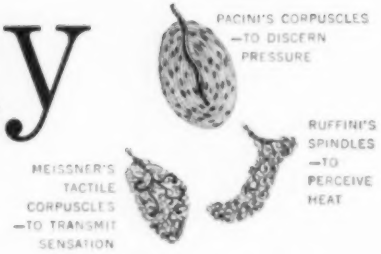
SYNALGOS®
CAPSULES

Promethazine Hydrochloride, Phenacetin, Acetylsalicylic Acid, and Mephentermine Sulfate

IVC®
IVES-CAMERON COMPANY
Philadelphia 1, Pa



the anatomy of touch



Invaluable to the diagnostician in helping him to exercise his skill are complex nerve endings which comprise the anatomy of touch.

Considerations of tactile sensitivity are probably nowhere more important than in the choice of a prophylactic. "Built-in" sensitivity characterizes RAMSES,® the superior rubber prophylactic. RAMSES are preferred by men because they are tissue-thin, transparent, naturally smooth, designed to interfere *least* with sensation – yet amazingly strong.

Confronted with vaginal trichomoniasis, many physicians now routinely specify use of a prophylactic to prevent conjugal re-infection.[1] In a recent study it was again pointed out that "...sexual intercourse accounted for most cases of re-infection."[2] Husbands cooperate more readily in the wife's treatment plan when you specify RAMSES, the prophylactic with "built-in" sensitivity.



RAMSES®
PROPHYLACTICS

RAMSES is a registered trade-mark of Julius Schmid, Inc.

1. Weiner, H. H.: Clin. Med. 5:25 (Jan.) 1958.
2. Giorlando, S. W., and Brandt, M. L.: Am. J. Obst. & Gynec. 76:666 (Sept.) 1958.

JULIUS SCHMID, INC.
423 West 55th Street, New York 19, N. Y.

senile vaginitis

a common postmenopausal disorder caused by ovarian failure with accompanying estrogen deficiency

responds to *the restoration of physiologic stimulation... rejuvenation of the atrophied mucosa to a more normal, healthy state that resists irritation... and drop in vaginal pH ...through local application of estrogen with*

"Premarin"

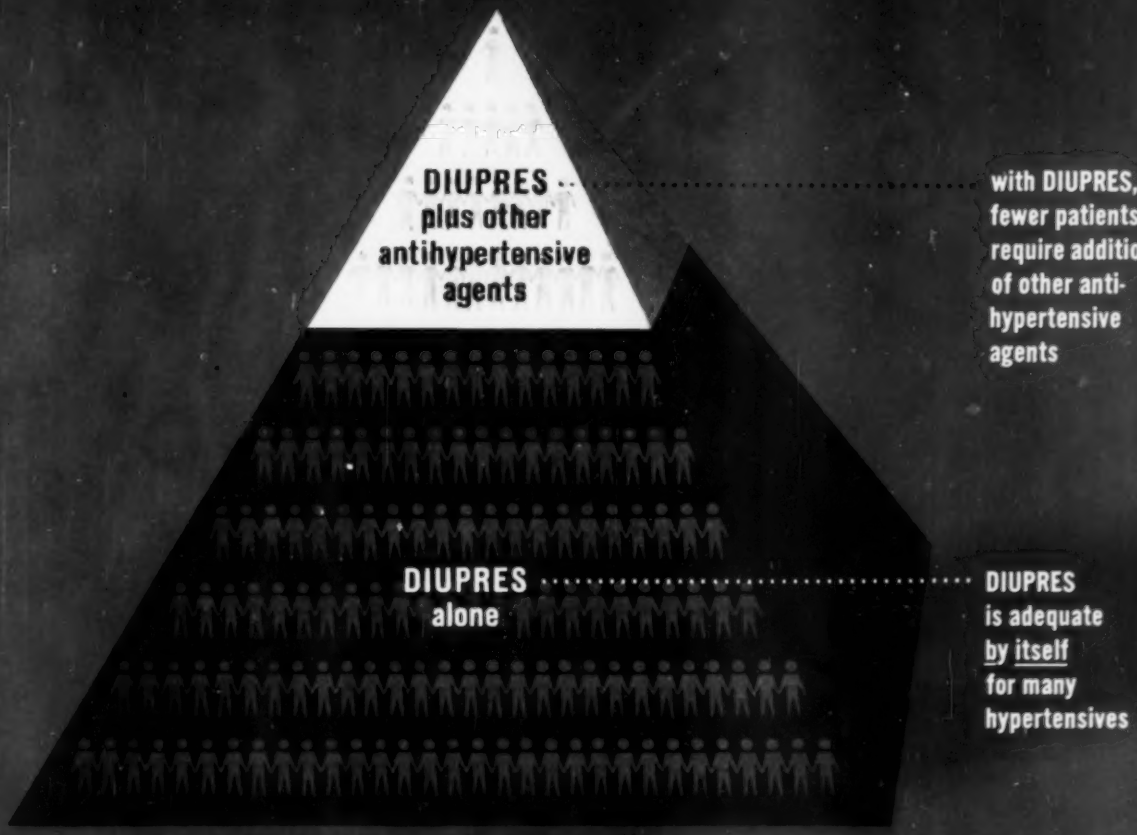
Vaginal Cream



Simplifies treatment... provides specific and effective therapy in senile and juvenile vaginitis. Pre- and postoperatively it restores the integrity of atrophied tissues, facilitates surgical procedures and favors healing. Also available with hydrocortisone as "Premarin" H-C Vaginal Cream, containing 1 mg. hydrocortisone, for immediate anti-inflammatory, antipruritic action when indicated to secure more rapid symptomatic relief, particularly in the initial stages of estrogen therapy of various vulvovaginal disorders.

"Premarin"® conjugated estrogens (equine) AYERST LABORATORIES, New York 16, N.Y.; Montreal, Canada

5861



DIUPRES PROVIDES "BROAD-BASE" ANTIHYPERTENSIVE THERAPY

...is effective by itself in a majority of patients with mild or moderate hypertension, and even in many with severe hypertension

greatly improved and simplified management of hypertension

DIUPRES®

DIURIL® WITH RESERPINE

the first "wide-range" antihypertensive—effective in mild, moderate, and severe hypertension

- more hypertensives can be better controlled with DIUPRES alone than with any other agent . . . with greater simplicity and convenience, and with decreased side effects
- can be used as total therapy or primary therapy, adding other drugs if necessary
- in patients now treated with other drugs, can be used as replacement or adjunctive therapy
- should other drugs need to be added, they can be given in much lower than usual dosage so that their side effects are often strikingly reduced
- organic changes of hypertension may be arrested and reversed . . . even anginal pain may be eliminated
- patient takes one tablet rather than two . . . dosage schedule is easy to follow
- economical

DIUPRES-500 500 mg. DIURIL (chlorothiazide), 0.125 mg. reserpine. One tablet one to three times a day.

DIUPRES-250 250 mg. DIURIL (chlorothiazide), 0.125 mg. reserpine. One tablet one to four times a day.

MSD MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

® DIUPRES AND DIURIL (CHLOROTHIAZIDE) ARE TRADEMARKS OF MERCK & CO., INC.


Upjohn screened 357
steroids to develop
Oxylone*...
the first steroid
designed
specifically for
topical application.
Available as:
Oxylone Topical Cream — each gram contains 0.25 mg. (0.025%) fluorometholone.
Neo-Oxylone* Topical Ointment—each gram contains 0.25 mg. (0.025%) fluorometholone and 5 mg. neomycin sulfate (equivalent to 3.5 mg. neomycin base).
Usual dose: 1 to 3 applications daily.
Supplied: In 7.5 Gm. tubes with applicator tips.
*TRADEMARK
Upjohn
The Upjohn Company, Kalamazoo, Michigan



Who Is This Doctor?

Identify the famous physician from clues in this brief biography

He was the first professor of diseases of children in America and a pioneer of bedside teaching.

He was the first president of the American Pediatric Society, founder of the pediatric section of A.M.A., founder of the pediatric section of the New York Academy of Medicine.

He considered himself a general practitioner rather than a pediatrician.

He received his M.D. from the University of Bonn, was jailed for two years for allegedly revolutionary activities, escaped and migrated to the U.S. with the great German migration after the revolt of 1848.

In 1870 he was appointed Clinical Professor of Diseases of Children at the College of Physicians and Surgeons of Columbia University.

He published two volumes of his writings in 1893 and eight large volumes in 1909. His most important subjects were diphtheria and the feeding and care of children.

He attacked the raising of children in institutions, regardless of what could be done for them there, and was expelled from the Nursery and Child's Hospital, where he was chief of staff.

He was one of the founders in New York of Mt. Sinai Hospital and of German Dispensary, now known as Lenox Hill Hospital.

He and philanthropist Nathan Straus established the first free milk station for the babies of indigent mothers. He established the first preventorium for tuberculosis in infants.

He was showered with honors in his lifetime, including the naming of a 70-bed pediatric division at Lenox Hill Hospital after him, many honorary university degrees and, in 1911, presidency of A.M.A.

In his 88th year he escaped death when his summer cottage was destroyed by fire. He suffered from severe shock and in the next year, 1919, he died.

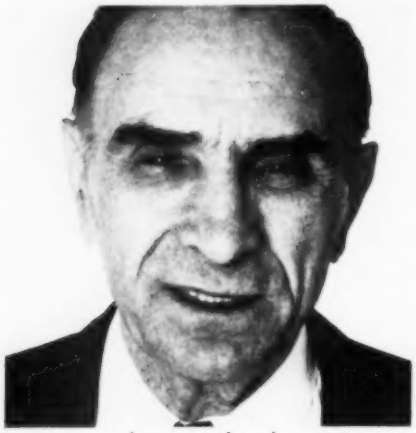
Can you name this doctor without turning to page 245a?



even glasses hurt my nose



throbs all day, could explode



hurts to laugh



pressure inside is terrible

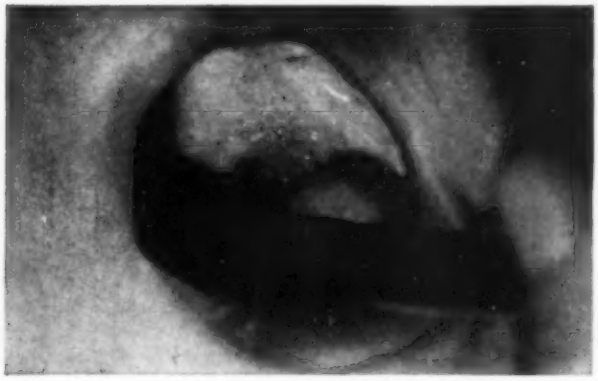
resolve sinus headache–**Sinutab**®

With a single new prescription you can resolve sinus or frontal headache. Sinutab aborts pain, decongests, relieves pressure and provides mild tranquilizing action to relax the patient. Prescribe Sinutab for prompt dependable relief of sinus or frontal headache. AVERAGE DOSAGE: Adults: Two tablets every four hours; prophylactically, one tablet every four hours. Children 6 to 12 years: one-half adult dosage. SINUTAB IS: N-acetyl-para-aminophenol, (APAP) 150 mg. (2½ gr.); Acetophenetidin, 150 mg. (2½ gr.); Phenylpropanolamine HCl, 25 mg. (⅜ gr.); Phenyltoloxamine Dihydrogen Citrate, 22 mg. (⅓ gr.). SUPPLIED: Bottles of 30 tablets.

WARNER CHILCOTT
MORRIS PLAINS, N. J.

®TRADEMARK

Fast, Gratifying Symptomatic Relief in Oropharyngeal Infections



ORABIOTIC® CHEWING GUM TROCHES

ANTIBIOTIC / ANALGESIC

The remarkable efficacy of ORABIOTIC in controlling oropharyngeal infection and pain has been confirmed in hundreds of post-tonsillectomy patients.[1-3] The topical analgesic action and the intermittent exercise of oropharyngeal muscles associated with the chewing of ORABIOTIC help relieve local discomfort in sore throat and various other pharyngeal conditions. Thus, ORABIOTIC provides gratifying symptomatic relief as well as adjunctive antibacterial therapy in acute tonsillitis, peritonsillitis, Vincent's (oropharyngeal) infection, parotitis and infectious gingivitis.

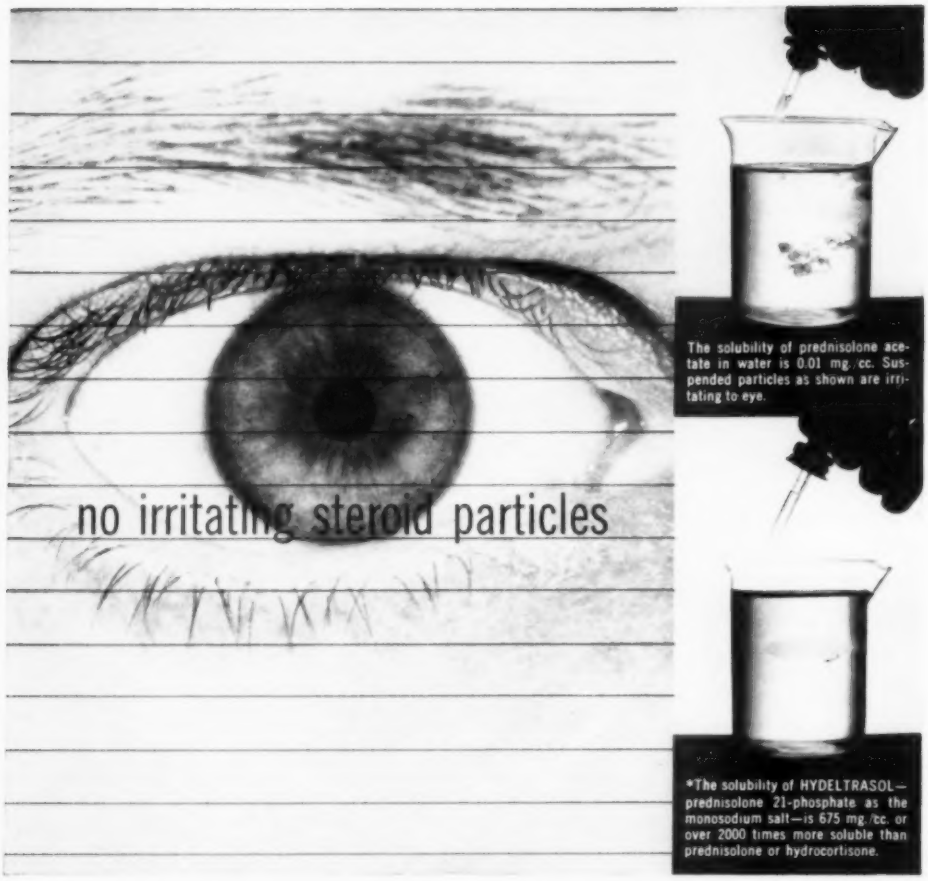
EACH TROCHE CONTAINS: 3.5 mg. Neomycin (from sulfate), 0.25 mg. Gramicidin, and 2.0 mg. Propesin (propyl p-aminobenzoate).

DOSAGE: One troche q.i.d. Supplied: In packages of 10 and 20.

References: 1. E.E.N.T. Mo. 36:294, May, 1957. 2. E.E.N.T. Mo. 36:406, July, 1957. 3. Clin. Med. 4:699, June, 1957.

Always—A Useful Adjunct to Systemic Treatment

WHITE LABORATORIES, INC. **KENILWORTH, N. J.**



STERILE OPHTHALMIC SOLUTION

NEO-HYDELTRASOL®

(prednisolone 21-phosphate with neomycin sulfate)

2000 times more soluble than prednisolone or hydrocortisone*

- free of any particulate matter capable of injuring ocular tissues.
- uniformly higher effective levels of prednisolone.

SUPPLIED: Sterile Ophthalmic Solution NEO-HYDELTRASOL 0.5% (with neomycin sulfate) and Sterile Ophthalmic Solution HYDELTRASOL 0.5%. In 5 cc. and 2.5 cc. dropper vials. Also available as Ophthalmic Ointment NEO-HYDELTRASOL 0.25% (with neomycin sulfate) and Ophthalmic Ointment HYDELTRASOL 0.25%. In 3.5 Gm. tubes.

HYDELTRASOL and NEO-HYDELTRASOL are trade-marks of Merck & Co., Inc.

MSD

MERCK SHARP & DOHME

Division of MERCK & CO., Inc., Philadelphia 1, Pa.

For acne and pimples with extensive **flush areas**

Acne Cort-Dome™

Hydrocortisone with sulfur, bithionol, resorcinol monoacetate, in aluminum acetate vehicle pH 5.0

CREME or LOTION

DOME

antiinflammatory/keratolytic





INCORPORATED IN EXCLUSIVE ACID MANTLE VEHICLE ®

Within a short period of time suppresses the epidermatitis of acne, reduces erythema, allays inflammation, soothes acute exacerbations and produces enough peeling action to gently open the papules and pustules. Restores and maintains normal acidity of the skin.

SIG: Apply morning and night to skin after washing and at night to scalp.

SUPPLY: Creme in 1 oz. tubes. Lotion in 1 oz. squeeze bottles. Samples and literature on request.

DOME CHEMICALS INC.

NEW YORK 23 LOS ANGELES 46

IN CANADA: 2765 BATES RD., MONTREAL, P. Q.

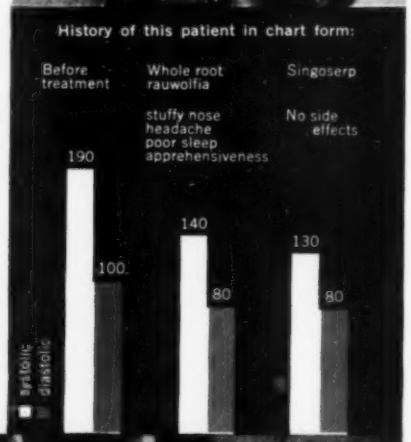
THE MOST TRUSTED NAME IN DERMATOLOGICALS

With Singoserp this patient's blood pressure was controlled for the first time without side effects

FROM THE FILES OF A PHILADELPHIA CARDIOLOGIST.
PHOTOS USED WITH PERMISSION OF THE PATIENT.



Tombstone salesman had known hypertension for 16 years; rejected by U.S. Army because of high blood pressure. Whole root rauwolfia lowered pressure satisfactorily, but patient could not tolerate side effects.



Singoserp in a dosage of 0.5 mg. daily lowered his blood pressure to 130/80, produced no side effects. Patient feels well, works well, speaks of marked improvement in outlook and function.



Clinical findings in 900 patients show the selective antihypertensive action of Singoserp

IN 736 PATIENTS, BLOOD PRESSURE FELL AN AVERAGE OF 30.7 mm. Hg:

- more than half of these patients suffered from **moderate to severe hypertension**
- more than half of the cases involved hypertension of at least 6 years' standing, with **many histories of up to 20 years' duration**

THE SIDE-EFFECTS PROBLEM WAS MINIMIZED IN MOST PATIENTS:

Chart shows gratifyingly low incidence of side effects in 233 patients given Singoserp with no other antihypertensive medication

Side Effect	Number	Per Cent
Lethargy	7	2.9
Headache	6	2.5
Gastrointestinal upset	3	1.2
Vertigo	2	0.8
Nasal congestion	1	0.4

DOSAGE:
In new patients: Average initial dose, 1 to 2 tablets (1 to 2 mg.) daily. Some patients may require and will tolerate 3 or more tablets daily. Maintenance dose will range from ½ to 3 tablets (0.5 to 3 mg.) daily.

In patients taking other antihypertensive medication: Add 1 to 2 Singoserp tablets (1 to 2 mg.) daily. Dosage of other agents should be revised downward to a level affording maximal control of blood pressure and minimal side effects.

Singoserp®
(syrosingopine CIBA)

CIBA
SUMMIT N. J.

2/2096MR

a major improvement in rauwolfia

a major advance in antihypertensive therapy

A workhorse "mycin" for common infections



respiratory infections

prompt, high blood levels

consistently reliable and reproducible blood levels

minimal adverse reactions

With well-tolerated CYCLAMYCIN, you will find it possible to control many common infections rapidly and to do so with remarkable freedom from untoward reactions. CYCLAMYCIN is indicated in numerous bacterial invasions of the respiratory system—lobar pneumonia, bronchopneumonia, tracheitis, bronchitis, and other acute infections. It has been proved effective against a wide range of organisms, such as pneumococci, H. influenzae, streptococci, and many strains of staphylococci, including some resistant to other "mycins." Supplied as Capsules, 125 and 250 mg., vials of 36; Oral Suspension, 125 mg. per 5-cc. teaspoonful, bottles of 2 fl. oz.

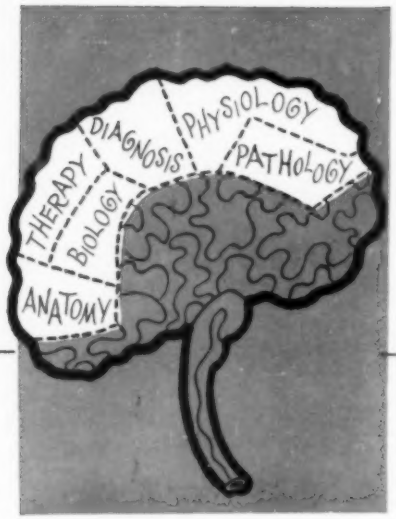
new

CYCLAMYCIN®

Triacetyloleandomycin, Wyeth

Conforms to Code for Advertising

Wyeth
Philadelphia 1, Pa.



Mediquiz

These questions were prepared especially for MEDICAL TIMES by the Professional Examination Service, a division of the American Public Health Association. Answers will be found on page 244a.

1. The malarial parasite which masses in the capillaries of the cerebrum causing pronounced central nervous system symptoms is:

A) Plasmodium falciparum.
B) Plasmodium malariae.
C) Plasmodium knowlesi.
D) Plasmodium praecox.
E) Plasmodium vivax.

2. Massive atelectasis of the right lower lobe on the lateral x-ray film will show the oblique fissure to be:

A) Displaced anteriorly.
B) Unchanged.
C) Displaced posteriorly.
D) In a horizontal position.
E) Convex anteriorly.

3. Which one of the following hernioplasties does *not* entail transplantation of the spermatic cord?

A) Ferguson's repair.
B) McArthur's repair.
C) Bassini's repair.
D) Halsted's repair.
E) McVey's repair.

4. Which of the following statements regarding the frequency of major surgical amputation for Buerger's disease is correct?

A) The best medical management can eliminate the need for major amputation.

B) All cases eventually require one or more major amputations.

C) Major amputation of an upper extremity is required in about 10 percent of cases, of a lower extremity in about 5 percent of cases.

D) Seventy percent of all cases will eventually require major amputation.

E) Multiple amputations of the legs are more common than single amputations of hands or arms.

5. Of the following, the only feature of benign giant cell tumor of the bone which differentiates it from solitary bone cyst is:

A) The absence of pain.
B) Its pathognomonic roentgenographic appearance.
C) Its rarity in the third and fourth decades.
D) Its occurrence at the ends of long bones.
E) Its rarity before epiphyseal closure.

6. The most frequent complication of epidemic typhus in children is:

A) Parotitis.
B) Renal Necrosis.
C) Deep venous thrombosis of the legs.
D) Bronchopneumonia.
E) Otitis.

Concluded on page 106a

For every topical indication, a Burroughs Wellcome 'SPORIN'...



OINTMENT: Tubes of ⅛ oz. and ½ oz. (with applicator tip) for ophthalmic or dermatologic application.

OTIC DROPS: Bottles of 5 cc. with sterile dropper.



OINTMENT: Tubes of ½ and 1 oz. and tubes of ⅛ oz. with ophthalmic tip.

OPHTHALMIC SOLUTION: Bottles of 10 cc. with sterile dropper.

NEW { **LOTION:** Plastic squeeze bottles of 20 cc.
POWDER: Shaker-top bottles of 10 Gm.



OINTMENT: Tubes of ½ oz., 1 oz. and ⅛ oz. (ophthalmic tip).

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.

FROM BASIC RESEARCH–BASIC PROGRESS

HYDRODIURIL*

HYDROCHLOROTHIAZIDE

a new measure of activity



in edema

whenever there is need for diuresis

in hypertension

effective by itself in some patients—always as background medication in any antihypertensive regimen.

summary of clinical information—HYDRODIURIL (HYDROCHLOROTHIAZIDE)

IN EDEMA:

- greater oral effectiveness than with any other class of diuretic agent
- diuretic effectiveness maintained even on prolonged daily administration
- 25 mg. HYDRODIURIL orally is equivalent to 1.6 cc. meralluride I.M.
- has been reported to be effective even in patients who did not respond satisfactorily to other diuretics
- low toxicity—extremely well tolerated
- often achieves the benefits of a low salt diet without the unpleasant restrictions





HYDRODIURIL (HYDROCHLOROTHIAZIDE)

- highly-active derivative of chlorothiazide
- similar qualitatively to chlorothiazide but 10 to 12 times more potent
- loss of potassium is clinically insignificant in the great majority of patients on normal diets

HYDRODIURIL®

HYDROCHLOROTHIAZIDE

NEW RELEASE

IN HYPERTENSION:

- provides background therapy in any antihypertensive regimen (by itself, HYDRODIURIL adequately controls hypertension in some patients)
- has been reported by some investigators to have a greater antihypertensive effect in some patients than does chlorothiazide at equivalent dose levels
- does not lower blood pressure in normotensives
- markedly potentiates other antihypertensive agents
- reduces dosage requirements for other agents, often with concomitant reduction in their distressing side effects
- smooths out blood pressure fluctuations





HYDRODIURIL*

NEW RELEASE

HYDROCHLOROTHIAZIDE





IS INDICATED IN:

1 Hypertension

2 Congestive heart failure of all degrees of severity

3 Premenstrual tension (edema)

4 Edema of pregnancy

5 Renal edema—nephrosis; nephritis

6 Cirrhosis with ascites

7 Drug-induced edema

8 as adjunctive therapy in the management of obesity complicated by edema

RECOMMENDED DOSAGE RANGE

In **EDEMA:** one to two 50 mg. tablets HYDRODIURIL once or twice a day

In **HYPERTENSION:** one or two 25 mg. tablets or one 50 mg. tablet HYDRODIURIL once or twice a day. (When HYDRODIURIL is used with a ganglion blocking agent, it is mandatory to reduce the dose of the latter by at least 50 per cent, immediately upon adding HYDRODIURIL to the regimen.)

SUPPLIED as 25 mg. and 50 mg. scored tablets, in bottles of 100 and 1000.

PRECAUTIONS:

It is important that dosage be adjusted as frequently as the needs of the individual patient demand.

HYDRODIURIL has shown no adverse effects on renal function and is essentially not nephrotoxic; for this reason it may be used with excellent results even in patients for whom organomercurials are contraindicated because of renal damage. The excretion of potassium is much lower than that of sodium and chloride and, as is the case with DIURIL®, the loss of potassium is clinically insignificant in the great majority of patients on normal diets. If indicated, this potassium loss may be easily replaced by including potassium-rich foods in the diet (orange juice, bananas, etc.).

Additional information on HYDRODIURIL is available on request.

BIBLIOGRAPHY:

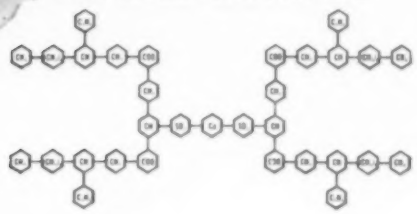
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MERCK SHARP & DOHME
Division of Merck & Co., Inc., Philadelphia 1, Pa.



NEW THERAPEUTIC CHEMICAL



a NEW DIMENSION IN THE TREATMENT OF CONSTIPATION

DOXIDAN

The Surfactant Laxative

"Ideal" laxative therapy has now been made possible by the application of a new principle based on the double surfactancy of the new therapeutic chemical, calcium bis-(dioctyl sulfosuccinate).

Doxidan provides positive, reliable laxative action with:

- Greatly reduced laxative dosage and optimal surfactancy.
- The least possible disturbance of normal body physiology.
- Freedom from the discomfort of bowel distention.
- Freedom from "oily leakage" and interference with vitamin absorption.
- Freedom from pain and "cramping."
- Greatly reduced risk of laxative habituation.

No longer is a "cathartic flush" needed to expel a hardened resistant fecal mass. Instead, once calcium bis-(dioctyl sulfosuccinate) has rendered the mass malleable and mobile, a gentle peristaltic stimulant is all that is needed to correct bowel dysfunction.

Doxidan is a true synergistic combination of calcium bis-(dioctyl sulfosuccinate), the new surfactant fecal softener, and Danthron, a mild peristaltic stimulant which acts solely in the lower bowel.

This new dimension in treatment (Doxidan therapy) results in soft, "normal" stools gently stimulated to evacuation.

Each maroon soft gelatin capsule contains 50 mg. Danthron (1,8-dihydroxyanthraquinone) and 60 mg. calcium bis-(dioctyl sulfosuccinate).

dosage: For adults and children over 12, one or two capsules. For children, age 6 to 12, one capsule. Give at bedtime for 2 or 3 days or until bowel movements are normal.

supplied: Bottles of 30 and 100 soft gelatin capsules.

LLOYD BROTHERS, INC. CINCINNATI 3, OHIO

Fostex®
treats their acne while they wash



degreases the skin helps remove blackheads dries and peels the skin

...and this is how it works

Fostex provides essential actions necessary in treating acne. It washes off excess oil. It unblocks pores by penetrating and softening blackheads. It dries and peels the skin, removing papule coverings, thus permitting drainage of sebaceous glands.

Fostex contains Sebulytic®,* a combination of surface-active wetting agents with remarkable antiseborrheic, keratolytic and antibacterial actions . . . enhanced by sulfur 2%, salicylic acid 2%, hexachlorophene 1%.

*sodium lauryl sulfoacetate, sodium alkyl aryl polyether sulfonate and sodium dioctyl sulfosuccinate.

Your patients will like Fostex because it is so simple to use. They simply wash acne skin 2 to 4 times a day with Fostex, instead of using soap.



FOSTEX CREAM

. . . in 4.5 oz. jars. For therapeutic washing in the initial phase of oily acne treatment.

Write for samples.



FOSTEX CAKE

. . . in bar form. For therapeutic washing to keep the skin dry and free of blackheads during maintenance therapy. Also used in relatively less oily acne.

WESTWOOD PHARMACEUTICALS • **Buffalo 13, New York**



"Doctors can't help shingles?"

Physicians who have used PROTAMIDE extensively deplore such statements as unfortunate when they appear in the lay press. They have repeatedly observed in their practice quick relief of pain, even in severe cases, shortened duration of lesions, and greatly lowered incidence of postherpetic neuralgia when PROTAMIDE was started promptly. A folio of reprints is available. These papers report on zoster in the elderly—the severely painful cases—patients with extensive lesions. PROTAMIDE users know "shingles" *can* be helped.



PROTAMIDE®

Sherman Laboratories

Detroit 11, Michigan

Available: Boxes of 10 ampuls—prescription pharmacies.

Concluded from page 97a

7. The total duration of typhoid fever in children is about:

A) 2-3 days.
B) 4-7 days.
C) 2-3 weeks.
D) 4-6 weeks.
E) 7-10 weeks.

8. Of the following alterations in the cellular elements of the blood, the only one which is frequently observed after a splenectomy is:

A) A thrombocytopenia.
B) A lymphopenia.
C) A leukopenia.
D) An increase in the reticulocytes.
E) An increase in poikilocytosis.

9. If the peripheral blood of a patient who has pernicious anemia is examined when the degree of the anemia is only mild, of the following the abnormality most often present is:

A) Poikilocytosis.
B) Megaloblasts.
C) An increased mean corpuscular hemoglobin concentration.
D) Large multisegmented polymorphonuclear leukocytes.
E) Marked thrombocytopenia.

10. Among the following diseases, the elimination or reduction of houseflies is of great importance in controlling the spread of:

A) Cholera.
B) Pinworms.
C) Poliomyelitis.
D) Filariasis.
E) Plague.

11. The prevention of dengue is largely a matter of:

A) Vaccination of the population.
B) Isolation of cases as soon as discovered.
C) Adequate mosquito control.
D) Prophylactic antibiotics.
E) Adequate fly control.

12. Convulsions associated with barbiturate administration are most apt to occur when:

A) Barbiturates have been preceded by the use of other drugs.
B) Patients have a history of allergy.
C) More than one form of barbiturate is used.
D) The drug is withdrawn.
E) The dosage of the drug is suddenly increased.

13. Taking into account variations in therapeutic response depending upon duration and severity of the disease, which one of the following statements on cardiac decompensation in beriberi heart disease is true?

A) Digitalis is of little or no value but thiamin causes dramatic compensation.
B) Large volumes of plasma should be given if the beriberi is of the 'wet' type, in order to correct the loss of blood protein.
C) The EKG usually shows high voltage in all leads except CF 2.
D) The heart rate is slow in contrast with the usual rapid rate seen in failure from other causes.
E) The Q-T interval in the EKG is considerably shortened.

14. The only one of the following anemias which, without disease of the liver, is characterized by an abnormal brownish-yellow color of the blood plasma is:

A) Myelophthisic anemia.
B) Aplastic anemia.
C) The simple chronic anemia of infection.
D) Pernicious anemia.
E) Hypochromic anemia.

(Answers on page 245a)

This anxiety patient can work now, Doctor.



Four weeks ago Mrs. C. complained of extreme weakness and attacks of trembling and sweating. There was tachycardia and breathing embarrassment on the slightest exertion. All of it started soon after the family suffered financial reverses. Her home life became disorganized; she couldn't cope with her housework.

Therapy with TRILAFON, 4 mg. t.i.d., was instituted and she's been coming in once a week to give vent to her feelings. Results have been excellent. There's no drowsiness with this drug—she's wide awake and active all day long. Now she's on maintenance dosage, 4 mg. b.i.d., and should be off the drug entirely in another week or two.

Schering



for patients immobilized by *anxiety*...

when you want to **avoid drowsiness**

Trilafon

perphenazine

- helps the patient **contain** anxiety, tension
- restores normal working capacity

TRILAFON Tablets—2 mg. and 4 mg.; bottles of 50 and 500.

TRILAFON REPETABS,® 8 mg.—4 mg. for *prompt effect* in the outer layer and 4 mg. for *prolonged relief* in the timed-action inner core; bottles of 30 and 100.

For complete details on TRILAFON consult Schering literature.

Schering

SCHERING CORPORATION • BLOOMFIELD, NEW JERSEY



"Anticholinergic drugs alone are inadequate in the management of peptic ulcer. . . . They should be administered only as adjuncts to conventional treatment with antacids, diet, sedation, and other therapeutic measures."[1]

1. Kirsner, J.B., et al.: M. Clin. North America *41*:499 (March) 1957.

In peptic ulcer: six aids to total management

ALUDROX SA is not only an effective anticholinergic, but also an antacid, sedative, demulcent, anticonstipant, and pepsin-inhibitor. Thus, one convenient preparation satisfies six requirements of total peptic-ulcer therapy.

An important new anticholinergic of demonstrated usefulness, *ambutonium*, is responsible for the potent antisecretory and antimotility properties of ALUDROX SA.

NEW

SUSPENSION TABLETS

ALUDROX® SA*

Aluminum Hydroxide Gel with Magnesium Hydroxide, Ambutonium Bromide, and Butabarbital, Wyeth

*Sedative and Anticholinergic

SUPPLIED: SUSPENSION, bottles of 12 fl. oz. TABLETS, bottles of 100. Each teaspoonful (5 cc.) and tablet contains 2.5 mg. of ambutonium and 8 mg. of butabarbital combined with aluminum hydroxide and magnesium hydroxide approximating 1 teaspoonful of aluminum hydroxide gel and ¼ teaspoonful of milk of magnesia. Also available: Tablets Ambutonium Bromide, 10 mg., bottles of 100.

Wyeth





FOR CONTROL OF MENORRHAGIA

ENOVID®

Prolonged or excessive menstrual flow of functional origin can be treated both therapeutically and prophylactically with Enovid.

The supportive action of two tablets of Enovid on the endometrium usually checks abnormal bleeding within six to twelve hours. A daily dosage of one or two tablets is then continued through the intermenstrual interval until day 25 of the cycle. The patient will menstruate approximately three days after discontinuance of therapy.

She is again treated with similar doses from day 5 to day 25 for two or three additional consecutive cycles.

A similar regimen is employed if the patient is seen during the intermenstrual interval. Even though no bleeding is present a dosage of one or two tablets daily is administered until day 25. Therapy is resumed from day 5 to day 25 for two or three successive cycles.

Each tablet of 10 mg. contains 9.85 mg. of norethynodrel, a new synthetic steroid, and 0.15 mg. of ethynylestradiol 3-methyl ether. G. D. Searle & Co., Chicago 80, Illinois.

ENOVID Oral Synthetic Endometropin
(brand of norethynodrel with ethynylestradiol 3-methyl ether)

SEARLE | *Research in the Service of Medicine*



MODERN MEDICINALS

These brief résumés of essential information on the newer medicinals, which are not yet listed in the various reference books, can be pasted on file cards and a record kept. This file can be kept by the physician for ready reference.

Compazine Suppositories 2.5 Mg., Smith Kline & French Laboratories, Philadelphia, Pennsylvania. New dosage strength, each suppository containing 2.5 mg. prochlorperazine. Indicated for the control of nausea and vomiting in children. *Dose:* As directed by physician, according to weight of child. *Sup:* Boxes of 6.

Cortisporin Lotion, Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, New York. Each cc. contains 10,000 Units Aerosporin brand Polymyxin B sulfate, 5 mg. neomycin sulfate, and 10 mg. hydrocortisone. Indicated for pustular acne, various dermatitis conditions, infantile and nummular eczema, intertrigo, anogenital pruritus, and plastic and anorectal surgery. *Use:* Apply to the area to be treated as often as needed. *Sup:* Plastic squeeze bottles of 10 cc.

Cosa-Signemycin Pediatric Drops, Pfizer Laboratories, Division of Chas. Pfizer & Co., Inc., Brooklyn, New York. Each 5 cc. teaspoonful, when reconstituted, contains 100 mg. glucosamine-potentiated tetracycline HCl equivalent to 67 mg. tetracycline HCl and 33 mg. triacetyloleandomycin. Indicated for treatment of mixed infections or when susceptibility testing is difficult or impractical. *Dose:* As directed by physician. *Sup:* Dropper bottles of 10 cc.

Demerol Compound, George A. Breon & Co., New York, New York. Multi-colored tablets, each containing a central white layer of 25.0 mg. Demerol hydrochloride, an outer green layer of 5.0 mg. dihydrocodeinone bitartrate, and an outer pink layer of 150.0 mg. acetyl-p-aminophenol. Indicated for symptomatic relief of pain, cough and fever accompanying upper respiratory infections. *Dose:* 1 or 2 tablets. *Sup:* Bottles of 100.

Doxical, Lloyd Brothers, Inc., Cincinnati, Ohio. Red capsules containing 240 mg., or pink capsules containing 50 mg. calcium bis-(dioctyl sulfosuccinate). Indicated as a fecal softening agent in constipation, possessing twice the surfactant activity of the older compound, dioctyl sodium sulfosuccinate. *Dose:* Adults, 1 red capsule daily; children, 1 to 3 capsules daily. *Sup:* Red capsules in bottles of 15 and 100. Pink capsules in bottles of 30 and 100.

Doxidan, Lloyd Brothers, Inc., Cincinnati, Ohio. Maroon capsules, each containing 50 mg. of 1,8-dihydroxyanthraquinone and 60 mg. calcium bis-(dioctyl sulfosuccinate). Indicated as an aid in the treatment of temporary constipation. *Dose:* As directed by physician. *Sup:* Bottles of 30 and 100.

Kenalog-S Lotion, E. R. Squibb & Sons, Division of Olin-Mathieson Chemical Corp., New York, New York. Each cc. contains

Concluded on page 114a

for easy,
fast, painless
removal
of ear wax
without
instrumentation



Cerumenex™
DROPS

PROVED EFFECTIVE IN 4,675 PATIENTS

315 clinicians report 'excellent' or 'good' results with 'Cerumenex' in 4,675 (95.1%) of 4,917 patients (ages 3 months to 83 years) with excessive or impacted cerumen. Markedly significant advantages over irrigation and H_2O_2 noted enthusiastically. Savings of patient time, effectiveness, patient acceptance and ease of administration impressive. For full report and clinical sample, write to Medical Director, The Purdue Frederick Company, 135 Christopher Street, New York.

SUPPLIED: For patient convenience and economy, prescribe 'Cerumenex' Drops in the regular 15 cc. or 8 cc. bottle, packaged with cellophane wrapped blunt-end dropper.

CERUMENEX™ CONTAINS CERAPONT† 10.0% IN PROPYLENE GLYCOL WITH CHLORBUTANOL 0.5%. †BRAND OF TRIETHANOLAMINE POLYPEPTIDE OLEATE CONDENSATE
U.S. & FOREIGN PATENTS PENDING

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. . . and one to grow on

A tiny tablet of REDISOL to stimulate the appetite – to help in the intake of food for growth.

REDISOL is crystalline vitamin B_{12}, an essential vitamin for growth and the fundamental metabolic processes.

Ideal for the growing child, the REDISOL tablet dissolves instantly on contact in the mouth, on food or in liquids.

Packaged in bottles hermetically sealed to keep the moisture out and to retain vitamin potency in 25 and 50 mcg. strengths, bottles of 36 and 100 – in 100 mcg. strength, bottles of 36, and in 250 mcg. strength, vials of 12.

Also available as a pleasant-tasting cherry-flavored elixir (5 mcg. per 5-cc. teaspoonful) and as REDISOL injectable, cyanocobalamin injection USP (30 and 100 mcg. per cc., 10-cc. vials and 1000 mcg. per cc. in 1, 5 and 10-cc. vials).

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REDISOL IS A TRADEMARK OF MERCK & CO., INC.

Complete... for CONTRACEPTION



HR® *Koromex Compact**

offers you the most for your discriminating patients

Contains: Koromex Coil spring diaphragm
Koromex Jelly—regular size tube
Koromex Cream—trial size
(inclusion of jelly and cream allows patient to select the one best suited to physiological variants)
Koromex Introducer

*Sanitary plastic, zippered storage bag, washable, appealingly feminine

Also available with flat spring Koromex or with arcing diaphragm (Koro-Flex)

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WHEN THE PATIENT BECOMES
AN EMPTY CALORIE PROBLEM

bananas

BELONG IN THE DAILY DIET

Bananas are a reliable nutritional ally for younger children and teen-agers, who are notoriously remiss in selecting a well-balanced diet. When these youngsters are tempted to cram themselves with "empty calorie" snacks, the banana fills the dietary gap, helping correct borderline vitamin-mineral deficiencies.

Bananas provide a well-rounded supply of vitamins, and their energy-giving carbohydrates are an aid in keeping pace with the teen-ager's "runaway" metabolism. They can be enjoyed any time, any place — at the table, watching TV, in the back yard, on the playground, or at a picnic.

rich in taste appeal — bananas fill without fattening

■ for greater vitality ■ for easier weight control ■ for better digestion

help yourself to a banana

UNITED FRUIT COMPANY
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Concluded from page 109a

1 mg. triamcinolone acetonide, 2.5 mg. neomycin base, and 0.25 mg. gramicidin. Indicated for atopic, seborrheic, or contact dermatitis, neurodermatitis, and other eczematous dermatoses amenable to topical corticosteroid-antibiotic therapy. *Use:* Rub into affected area 2 or 3 times daily. *Sup:* Plastic squeeze bottles of 7.5 cc.

Madriqid, Roche Laboratories, Division of Hoffmann-La Roche Inc., Nutley, New Jersey. Additional dosage form of Madribon, for *four-times-a-day* administration. Capsules, each containing 125 mg. Madribon. Indicated especially for the treatment of infections when q.i.d. dosage is preferred. *Dose:* As directed by physician. *Sup:* Bottles of 100 and 1000.

Nolamine, G. W. Carnrick Company, Newark, New Jersey. Tablets, each containing 4 mg. chlorprophenpyridamine maleate, 24 mg. phenindamine tartrate, and 50 mg. phenylpropanolamine HCl. Indicated for relief of upper respiratory and nasal congestion associated with common cold, sinusitis, rhinitis, nasopharyngitis, rhinorrhea and congestion associated with hayfever and other allergies. *Dose:* One tablet every eight hours. Mild cases, every 10 to 12 hours. *Sup:* Bottles of 50.

Noludar 300, Roche Laboratories, Division of Hoffmann-La Roche, Inc., Nutley, New Jersey. New dosage form. Amethyst and white capsules, each containing 300 mg. Noludar. Indicated for the patient who has trouble falling asleep; also useful in providing a full night of restful sleep for the patient who awakens several times during the night. *Dose:* Usual adult dosage is 1 capsule at bedtime. Children as directed by physician. *Sup:* Bottles of 100 and 500.

Senotab, The Purdue Frederick Co., New York, New York. Coated tablets, each containing the equivalent of 10 mg. sennasides A and B. Indicated for treatment of acute and chronic constipation. *Dose:* 1 or 2 tablets before retiring. *Sup:* Bottles of 50.

Sinografin, E. R. Squibb & Sons, Division of Olin-Mathieson Chemical Corp., New York, New York. Water-soluble contrast agent containing diatrizoate methylglucamine and iodipamide methylglucamine. Indicated to permit optimal visualization of the female genital tract, rapid demonstration of tubal patency and outline of such abnormalities as tubal clubbing, hydrosalpinx, submucous fibroids, bicornate uterus and endocervicitis. *Administration:* As directed by physician. *Sup:* Vials of 10 cc.

Thoreze, The Central Pharmacal Co., Seymour, Indiana. Yellow lozenges, each containing 5 mg. d-methorphan HBr, 25 mg. ascorbic acid and 1 mg. propyl p-aminobenzoate. For temporary control of coughs. *Dose:* Adults, 1 lozenge as needed, up to 12 in 12 hours. *Sup:* Bottles of 30, 100 and 500.

Triburon and Triburon-HC, Roche Laboratories, Division of Hoffmann-La Roche, Inc., Nutley, New Jersey. *Indications:* For prevention and control of primary and secondary skin and wound infections such as pyodermas, infected dermatoses, postular folliculitis and infected burns. Triburon-HC indicated for these same infections when the anti-inflammatory, antipruritic action of a steroid is desirable. *Application:* Rub gently on affected area 3 or 4 times daily. *Sup:* Triburon Ointment 0.1% in tubes of 1 oz. and jars of 1 lb. Triburon-HC Ointment containing Triburon 0.1% plus hydrocortisone 0.5% in tubes of 5 Gm. and 20 Gm.

Not available to the wives of Lorenzo il Magnifico de Medici despite the wealth of his family & the city of Florence which he ruled



Now available at low cost New MOL-IRON® PRENATAL

NEW ECONOMY: less than ½ the usual cost. NEW CONVENIENCE: only 1 tablet a day. Especially "special" because of MOL-IRON, the unique molybdenized ferrous iron complex—for over 10 years unexcelled in tolerance and effectiveness, particularly in pregnant women!

Bottles of 30 (month's supply)/Bottles of 90 (trimester's supply)

Just one Tablet a day provides:

Vitamin A	6000 U.S.P.U.
Vitamin D	600 U.S.P.U.
Vitamin K	2 mg.
Vitamin E	1 Int. U.
Vitamin C (Ascorbic Acid)	100 mg.
Thiamine	5 mg.
Vitamin B_{12}	2 mcg.
Folic Acid	0.25 mg.
Riboflavin	5 mg.
Pyridoxine	2 mg.
Panthenol	5 mg.
Nicotinamide	30 mg.
Mol-Iron:	
Ferrous Sulfate	75 mg.
Molybdenum Oxide	1.1 mg.
Calcium	150 mg.
Cobalt	0.1 mg.
Copper	1 mg.
Iodine	0.2 mg.
Magnesium	6 mg.
Manganese	1 mg.
Potassium	5 mg.
Zinc	1.5 mg.

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after surgery . . .

apply a bacterial barrier

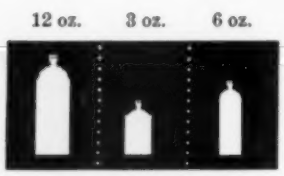
against resistant Staph.

AEROPLAST® surgical dressing

shuts out Staphylococcus aureus—and *all other* contaminants—with the speed of a spray . . . with the strength of plastic. The sprayed-on Aeroplast film forms a transparent occlusive barrier which provides "a window on the wound" permitting visual inspection at any time . . . yet protects the incision against contamination and irritation from exudates, urine and feces. Aeroplast's yellow tint helps to define the area dressed . . . aids in controlling application.

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Rx is not required.

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help prepare your patients
for a healthy, active later life

PRESCRIBE

ELDEC

vitamin-mineral-hormone supplement

KAPSEALS®

during their middle years

each KAPSEAL *contains:*

vitamins	
Vitamin A	1,667 Units (0.5 mg.)
Vitamin B_1 mononitrate	0.67 mg.
Ascorbic acid	33.3 mg.
Nicotinamide	16.7 mg.
Vitamin B_2	0.67 mg.
Vitamin B_6	0.5 mg.
Vitamin B_{12} with intrinsic factor concentrate	0.033 USP Unit (oral)
Folic acid	0.1 mg.
Choline bitartrate	6.67 mg.
Pantothenic acid (as the sodium salt)	5 mg.
minerals	
Ferrous sulfate (exsiccated)	16.7 mg.
Iodine (as potassium iodide)	0.05 mg.
Calcium carbonate	66.7 mg.
digestive enzymes	
Taka-Diastase®	20 mg.
Pancreatin	133.3 mg.
protein improvement factors	
l-Lysine monohydrochloride	66.7 mg.
dl-Methionine	16.7 mg.
gonadal hormones	
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OBESITY and HEART DISEASE

CHARLES F. WILKINSON, JR., M.D.
New York, New York

In any discussion it is well to define terms and, insofar as is possible, break these terms down into classes and subclasses. For the purpose of this paper, obesity is defined as an increase in adipose tissue in relation to bone and muscle mass. It follows, then, that a person can be overweight without being obese, and a person can be obese without being overweight. Later, when the concept of ideal weight versus overweight is discussed, this will be dealt with in greater detail. While fat people are all obese, some obese people may not appear fat, or may not appear fat according to our, or some other, national ideal. In some countries pulchritude is just north of the Mason-Dixon line of obesity.

My associates and I have found it convenient to divide obesity into three groups, the first two of which are relatively common and the third rather rare.

Cultural Obesity

These are the children of fat parents and fat grandparents. Their eating habits are regular and montonous. They have been taught by example and innuendo that less than a given amount of potatoes, rice, beef, etc., leaves them hungry. They are, for the most part, heavy consumers of bland carbohydrate; the fat in their diet is largely grease on the outside of their food. Frequently this type of obesity can be controlled if eating habits are changed. We should urge them not to restrict their diet to foods which have, in their minds at least, a definite satiety value. By eliminating such foods from their diet entirely, much can be gained.

TABLE I AVERAGE WEIGHT FOR HEIGHT TABLE — WOMEN

HEIGHT		WEIGHTS ACCORDING TO AGE PERIOD						
Feet	Inches	*15 to 19	20 to 24	25 to 29	30 to 35	35 to 40	40 to 45	45 to 50
*4	10	107	111	114	117	111	105	100
*4	11	108	113	116	119	113	107	102
5	0	110	115	118	121	115	109	104
5	1	112	117	120	123	117	111	105
5	2	115	120	122	125	119	113	107
5	3	118	123	125	128	122	116	110
5	4	121	126	129	132	126	120	114
5	5	124	129	132	136	129	123	117
5	6	129	133	136	140	133	126	120
5	7	133	137	140	144	137	130	123
5	8	137	141	144	148	141	134	127
5	9	140	145	148	152	145	138	131
5	10	144	149	152	155	147	140	133
5	11	149	153	155	158	150	143	136
6	0	153	157	159	162	154	146	139

Figures to and including 30 to 35 years of age are from tables prepared by the Metropolitan Life Insurance Company. Height with shoes on. Average height heels used in computing for women is 1½ inches. Allowance is made

Caloric restriction while eating unusual and new foods is usually easier than caloric restriction when no change is made in the type of food consumed. Incidentally, these are the individuals most likely to reflect renown on the physician who gives them a proper reducing diet.

Neurotic Obesity

Everyone knows of the woman who says she "eats like a bird." She does eat like a bird—all day long! The neurotically obese individual is a compulsive eater and eats in dabs. Frequently the ingestion of food is either unconscious or the act swiftly forgotten and patients may be quite honest when they tell you they don't eat a thing at meal time and do not know why they get fat. These are the individuals who frequently snack and forget. They are also the people least likely to stay on a reduction diet or if, through some major effort of will they do, the results are likely to be quite temporary. These are sick people and need emotional support and, not infrequently, the aid of a psychiatrist.

Organic Obesity

In this group we would include the central nervous system lesions that produce craving for food and the hypoglycemic patient who eats constantly to avoid attacks or to prolong the interval between them.[1] If the concept of faulty or slow mobilization of fat depots[2] is to be accepted, it should be included here. These, I believe, are relatively rare and in many cases, if the proper diagnosis is made, the obesity is,

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From the Department of Medicine of the New York University Post-Graduate Medical School, New York, New York.

MEN

HEIGHT		WEIGHTS ACCORDING TO AGE PERIOD						
Feet	Inches	*15 to 19	20 to 24	25 to 29	30 to 35	35 to 40	40 to 45	45 to 50
5	0	113	119	124	127	121	115	109
5	1	115	121	126	129	123	117	111
5	2	118	124	128	131	124	118	112
5	3	121	127	131	134	127	121	115
5	4	124	131	134	137	130	124	118
5	5	128	135	138	141	134	127	121
5	6	132	139	142	145	138	131	125
5	7	136	142	146	149	142	135	128
5	8	140	146	150	154	146	139	132
5	9	144	150	154	158	150	143	136
5	10	148	154	158	163	155	147	140
5	11	153	158	163	168	160	152	145
6	0	158	163	169	174	166	158	150
6	1	163	168	175	180	171	162	154
6	2	168	173	181	186	177	168	160

for higher or lower heels. Weight in pounds according to age (as ordinarily dressed).

*Standard weights compiled from Davenport's table in McLester's "Nutrition and Diet in Health Disease."

usually, no longer a problem. So far as I know, no real case has been made for a true genetic factor of obesity in the human, though it has been demonstrated in experimental animals.[3]

What is ideal weight? How far from the ideal weight is obesity? One of the earliest efforts to establish a norm for weight was completed by an insurance company which showed weight for height in men and women gradually increasing over the years. This, of course, did not represent ideal weight, but the usual weight in a specific population which was economically stable enough to buy insurance. Attempts to rectify this and to establish a norm have been many. One method was to take insurance tables and cut them after age thirty-five and to assume that from thirty-five on weight should stay constant.[1] Other attempts have been made to correct this concept and, while I am sure that our method is not unique, I shall present it for what it is worth.

We assume, in our laboratory, that people who are not engaged in heavy labor, nor afflicted with the mid-western compulsion for exercise, tend to have a decrease in their muscle mass after the age of thirty, and that this decrease continues until about the age of fifty, when they become more or less stabilized. If, then, their weight remains constant while their bodies undergo a decrease in muscle mass, they must be increasing their adipose tissue.

We have, arbitrarily, held the weight constant between thirty and thirty-five years of age. From thirty-five to forty we expect a five percent decrease; from forty to forty-five, a five percent decrease; from forty-five to fifty still another five percent decrease; and, after fifty, assume that stabilization of muscle tissue has been adjusted and hold weight constant from then on (Table I).

As I mentioned, these are arbitrary figures which we are currently attempting to test. As



FIGURE I. This individual is obviously carrying approximately 60 pounds of excessive adipose tissue.

FIGURE II. The same individual after she has reduced to her ideal weight.

FIGURE III. The same individual as in Fig I, carrying the same amount of excessive adipose tissue, but with a somewhat different distribution.

yet we do not have the data to substantiate this hypothesis and times does not allow me to go into the details of the experiment.

We have now discussed obesity, fatness, ideal weight and the types of obesity. We will discuss obesity in its relation to heart disease by dividing heart disease into the following classifications:

1. Valvular Heart Disease.
2. Congenital Heart Disease.
3. Hypertensive Heart Disease.
4. Atherosclerotic Heart Disease.
5. Combinations of the above.

Any of the above may occur with or without congestive heart failure. While heart disease without failure does not impose the problem that heart disease with failure does, it is a matter of degree and I should like, for the sake of simplicity, to say that a person with heart disease and no failure is potentially a candidate for congestive heart failure.

If you would look at the obese patient (Figure I) and then see her as she would look when reduced to ideal weight (Figure II), you would see a much more attractive person, one who has a much better chance to live with her diseased heart. To make my point clearer, however, I have assumed that this person of ideal weight is encumbered by the same impedimentia that she had when she was fat, but it is less noticeable from the front view, while extremely obvious from the side (Figure III). I know of no physician who would not cut the straps of the lard tub. Excessive weight in the obese cardiac does the patient no less harm than the same amount of lard would do, if strapped to the shoulders and is, I think, much more unattractive.

If I have made by point about the disadvantage of fat in the patient with heart disease by this analogy, I am satisfied. If I have not made my point, it would be a waste of all of our time to go on. There can be no argument as to whether obesity is good or bad in individuals who have established heart disease. It is bad. It is worse than that; it is mediocre.



Age: 30
Height:
5 ft. 6 in.
Weight: 140

Probably no one would try to make a case for obesity as an etiological factor in any of the above classes of heart disease except the hypertensive and atherosclerotic. Essential hypertension and hypertension secondary to chronic renal disease are undoubtedly complicated by obesity, as is any heart disease. It can hardly be said, however, that obesity is a true etiological factor. Simple hypertension, which is often non-symptomatic, does seem to be etiologically related to obesity. The obese person with mild hypertension usually has a reduction in blood pressure when his weight is reduced to ideal. If, however, he again becomes obese we can expect to find his blood pressure elevated.[4]

This mechanism is not clear. The increased capillary bed of the adipose tissue has been implicated, as has the extra effort required to transport the excessive poundage. Certainly the metabolic processes of the fat person are increased.[5] All in all, whatever the mechanics, we can state with assurance that many cases of simple hypertension can be correlated with obesity.

Does obesity predispose to a greater incidence of atherosclerosis? Here there is an honest difference of opinion. Wilens[6] has pointed out that in autopsy cases studied by him at Bellevue Hospital, the degree of atherosclerosis found in those that were obese at death was significantly greater than those not obese at death. He has also shown that individuals who had been obese but, for one reason or another, died not obese had less atherosclerosis than would have been predicted had they continued to be obese.[6] This is disputed by some authorities and confirmed by others.[7, 8]

Most of us, while not entirely satisfied that obesity is, per se, a simple, direct, etiological factor, have misgivings about the fat man or woman and would, I am sure, concur with the opinion of Dr. Norman Jolliffe that the best advice we can give patients as far as atherosclerosis is concerned is to "never become overweight and, if overweight, reduce and stay reduced."[9] Despite the fact that Dr. Jolliffe and I arrive at the term "obesity" by slightly different methods, I do not believe that we disagree fundamentally. By and large, while our methods for defining obesity are different, the same patients are fat in his clinic that are fat in our clinic. Time will not allow us, nor is it the purpose of this talk, to go into the various types of diet in regard to anything but caloric content. This is not a discussion of high versus low cholesterol, animal versus vegetable fat or saturated versus unsaturated fatty acids. It is concerned entirely with too many calories versus adequate, but not excessive, calories.

I believe that it was Dr. Frank Evans who defined obesity as "a disease of the mouth," but, whether it was Dr. Evans or some other wise physician, the fact remains that obesity is "a disease of the mouth." This does not mean that problems of the appetite are not cogent, any more than it means that the neurotically obese individual does not have a different problem than the culturally obese patient. Obesity is still the result of an excessive intake of calories no matter what the cause. I am not aware

of the presence of any gland of internal secretion that has an external opening into which food could enter. Nor do I see how one can get calories from the air.

This leaves us with a very practical problem. How do we convert fat patients to non-fat patients? The answer seems to be simple and that is to decrease the amount of calories they ingest and, if we wish them to be healthy, we supply them with adequate proteins, vitamins, minerals and essential fatty acids. There are a number of ways to write a diet. Reduction diets range from approximately eighteen hundred calories to the Evans' diet of approximately five hundred calories. I prefer the latter and for the following reasons:

1. Results are obtained at a rate which tends to keep the patient encouraged insofar as they can see or be told that they have lost weight from week to week.

2. It requires an investment on the patient's part because it is a weighed diet and individual food scales must be purchased. At least we know that the patient intends to follow the diet to the extent of the purchase price of the scales.

3. A ritual is involved; namely, the weighing of food at each meal. I think that ritual adds emphasis, and three times a day emphasis is placed on the caloric content of what is eaten.

4. One of the most important assets in the Evans' type diet is the change in dietary habits involved. This is particularly important in the culturally obese. It is a diet that is quite different in its makeup from the usual diet. It requires imagination and skillful preparation and, frequently, the person who has been a "meat, beans, potatoes, biscuits with gravy and deep-dish apple pie" sort of eater finds that food can be fun and not just filling. They learn to eat different types of salads and new ways to cook. I have known patients who had never eaten artichokes or properly cooked string beans learn how delicious these, and other foods, could be.

This type of diet requires imagination and work on the part of the dietician. It is not easy for her, but the final outcome is worth it. It gives the patient the opportunity, during the course of dieting, to break fixed eating habits, improve their appreciation of food and, thus, have less difficulty staying reduced (Table II).

TABLE II LUNCH: EVANS' DIET*

Round Steak	120 gm.
Artichoke†	100 gm.
cooked in savory, fat free, court bouillon	
Broiled Mushrooms	ad. lib.
Salad of 3% vegetables	ad. lib.
with fortified mineral oil dressing or mayonnaise	
Jello	75 gm.
12% fruit added	
Coffee or Tea	ad. lib.
non-caloric sweetener	

* This menu illustrates a lunch that can be prepared within the limits of the Evans' diet that is filling, nutritious and, in the opinion of the author, very delicious.

† May be served cold with fortified mineral oil mayonnaise, or hot with dressing of court bouillon thickened with filé.

All the advantages that are inherent in the extremely low caloric diet are absent, to a greater or lesser degree, in the higher caloric diet.

The one disadvantage is its expense. It is unquestionably more expensive than most of the higher caloric diets.

I was asked to state, during this talk, some of the disadvantages of rapid reduction. Since I knew none, I went to the literature and found that those which have been cited by some authorities have been contradicted by others.[1] I would like to remind you again of the person, with or without heart disease, who has the lard tub strapped to her shoulders. Would you cut the straps? Or would you take out a teaspoonful of lard per day?

More specifically, let us review some of the so-called disadvantages. Many are old wives' tales, such as, "gall bladder attacks occur more frequently during weight reduction." To the

best of my knowledge, the incidence of gall stones in patients who have started to reduce is no greater than the incidence in women (fair, fat and forty) which would have occurred had they not started their reduction diet two weeks before the symptoms of cholelithiasis became evident.

The effect of rapid reduction on the blood lipids has been mentioned. Some authorities have felt or intimated that a drastic change in blood lipids, either up or down, was associated with rapid weight reduction;[10, 11, 12] this has never been my experience and is not confirmed by recent literature on the subject.[13, 14]

The Evans' type diet contains sufficient protein so that the patient is not put into negative nitrogen balance. It should, of course, be fortified with vitamins and minerals as it is inadequate without fortification. Other than its borderline content of vitamins and minerals, it contains everything that we know of that is necessary to keep our patient healthy, and his health is further improved as the obesity is reduced.

Summary

1. Obesity in established heart disease is unquestionably undesirable.

2. Obesity as an etiological agent is considered only in simple hypertension and in atherosclerosis, and here there is a difference of opinion among investigators.

3. The proper use of the very low caloric diet is the most logical treatment of obesity.

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550 First Avenue

Esophageal Speech

HENRY M. THOMAS, III

Baltimore, Maryland

From time to time MEDICAL TIMES will publish papers written by medical students, which the Editor feels are generally informative, well prepared, and unique subjects. This review by Henry M. Thomas, III, a student in the Johns Hopkins Medical School, was written by him to satisfy certain requirements in his course on Anatomy.

Esophageal speech, in which the role of the lungs and larynx is taken over by the upper part of the alimentary tract, as an alternative to laryngeal speech which may be used by those whose larynx has ceased to function. Esophageal speech is thought to be about one hundred years old and to have been discovered by a patient who had lost his larynx. It has come into prominence with the great increase in the number of operations for laryngectomy performed for carcinoma of the larynx. In addition to those people undergoing laryngectomy, there are some who lose laryngeal function for other reasons, such as crushing of the larynx; thus there is a large group of people in need of alternative speech methods.

Since the First World War many papers have been written about esophageal speech, most of which deal with methods of teaching esophageal speech, but some of which discuss the anatomy and mechanism of esophageal speech. As Wepman has commented,[16] there has been more speculation and subjective analysis than objective research in the field. This fact is easily explainable, for not only is the subject a specialized one, which does not lead to the understanding of other phenomena directly, but also many laryngectomized people have learned adequate pseudo-voice without needing complex equipment or instruction.

However, esophageal speech is obviously inferior to laryngeal speech; there are patients who never learn adequate esophageal speech. To improve the lot of the "laryngectomee," there has been considerable work over the years.

A primary problem is to ascertain the best type of alternative speech; besides esophageal speech there is speech with the artificial larynx, parabuccal speech (in which air in the cheek is driven between the cheek and the teeth),[15] and various types of speech roughly categorized as esophageal speech, but which actually differ from the true esophageal speech (such as speech using air from the stomach). Parabuccal speech can be dismissed because it does not give a normal type of speech; none of the variants of esophageal speech seem to be as effective as the kind which is really esophageal; the artificial larynx has given results which most

workers in the field have felt to be inferior to esophageal speech, and has been used chiefly by those who are unable to develop their own pseudo-voice. Esophageal speech is therefore the preferred alternative voice.

Recently Hyman[7] has published a study which shows that college students prefer to listen to recordings of speech from an individual having an artificial larynx rather than recordings from one having esophageal speech, and that the two methods are approximately equal in intelligibility in recordings. However, it would seem that the artificial larynx might impair the visual aid to understanding speech given by the lips; also the artificial larynx creates a visual distraction and perhaps a feeling of awkwardness in even the most practiced user of the artificial larynx. Thus the present evidence does not really affect the preference for esophageal speech. The results of Hyman's proposed preference studies using sound movies of the two types of speech would give a more definite answer to the questions he has raised.

In laryngeal speech air from the lungs rushes between the tense vocal cords causing vibrations of the cords which create the basic sound wave. The sound is modified in the mouth into syllables and words by the palate, tongue and lips. In esophageal speech the mouth is not changed but there are substitutes for the lungs and the vocal cords. The supply of air, the propulsion of air through to the mouth, and the nature of the vibrator have all been studied to explain the nature of esophageal speech.

In 1937 Brighton and Boone[2] published a roentgenographic demonstration of the method of speech in cases of complete laryngectomy. Using air-contrast methods of radiology, they were able to demonstrate that there seemed to be a constriction at the level of the cricopharyngeus muscle which would be the pseudoglottis. In this period there was apparently much discussion about the nature of the mechanism of esophageal speech; many people believed the cricopharyngeus muscle to be the important factor, but others thought that various other parts of the pharynx and esophagus might be involved.

In 1938, in a monograph on *Affectations of the Cricopharyngeal Fold*, Negus[13] suggested that it was the site of a sphincter at the top of the esophagus, serving one set of functions normally, but serving as a pseudoglottis in the speech of the laryngectomized. The cricopharyngeus muscle consists of the lowest fibers of the inferior constrictor muscle and is in relation to the circular musculature of the esophagus. Negus stated that the chief function of the fold is to serve as a valve to prevent air from entering the esophagus where it would serve no useful purpose and would subtract from the volume of air entering the lungs. The muscle remains contracted during inspiration whereas the rest of the constrictor musculature is relaxed. In the learning of esophageal speech, then, it would be necessary to gain voluntary control over the cricopharyngeus muscle, and reverse the normal behavior of the muscle.

Negus thought that in laryngectomy it is quite important to take care in detaching the cricopharyngeus muscle from its attachment on the cricoid and thyroid cartilages and to unite the two halves after the removal of the larynx. The sphincter is probably weakened and the swallowing of air is thus easier for the laryngectomee than for the normal person.

Clerf and Putney[3] contributed to the understanding of the region in a paper on *Cricopharyngeal Spasm*. They emphasized the fact that the cricopharyngeus does not encircle the esophagus and that the sphincter action is thus caused by a fold from the posterior of the esophagus pressing against the foreward part of the esophagus which is restrained by the cricoid cartilage. They agreed that the fold was the chief esophageal sphincter but claimed that the fold was not the sphincter of the pseudovoice. X-rays of the region in one case of esophageal speech supported their claim, for the sphincter in phonation was at the level of the first thoracic vertebra.

In 1943, Templeton and Kredel[15] made a roentgenologic study of the cricopharyngeal sphincter, with a major improvement of technique. Instead of air-contrast, they used a radio-opaque sustance to outline the extent of

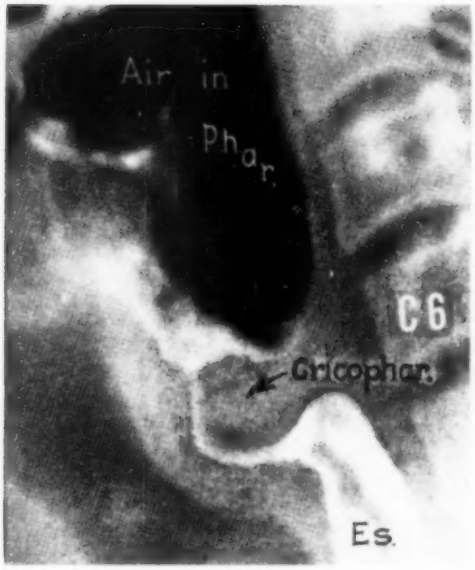
the structures under examination. Their relatively simple technique for fluoroscopic and x-ray examination of the pharynx and esophagus consists of having the patient take a swallow of barium and then refrain from swallowing again. The bolus is conducted to the stomach, and some of the radio-opaque barium is left on the sides of the structures passed through. In the resting stage the esophagus is shown collapsed, as would be expected in an empty muscular tube. The Valsalva test (a forced expiration with closed glottis after deep inspiration) performed against the closed mouth and nares instead of closed glottis shows (in normal subjects) the region above the cricopharyngeal fold distended and the fold contracted tightly. The more vigorously the Valsalva test is performed, the more the sphincter becomes contracted. In no instance did the air force its way through the sphincter. This evidence supports Negus's claim about the normal function of the fold.

The authors claim that although the innervation of the cricopharyngeal muscle is not completely understood, it is evident that there is special innervation which allows the muscle to contract separately from the rest of the constrictor musculature, as well as the innervation which coordinates the muscle in the peristaltic motion of the esophagus in passing a bolus to the stomach. Templeton and Kredel also state that the cricopharyngeus muscle is normally relaxed (in the resting state of the esophagus, in which the lumen is obliterated) but becomes contracted by muscular tone and possibly other neural stimulus in any situation except swallowing in which there is an attempt to distend the esophagus, such as breathing, coughing, and blowing. Also included in this report are x-rays of a laryngectomized patient; the authors state that the muscular mass in the position of the cricopharyngeus would seem to be the organ which vibrates in esophageal speech.

In 1944 Lindsay, Morgan, and Wepman[8] wrote a specific paper, *The Cricopharyngeus Muscle in Esophageal Speech,* which demonstrated quite clearly that the muscle does form the pseudoglottis in esophageal speech. The authors followed the technique of Templeton and Kredel and applied it to the study of laryngectomees. They were able to obtain, by good synchronization, x-rays which showed a partly open sphincter while the subject was taking in air before phonation, and the partly open sphincter during phonation, with blurring of the edges of the cricopharyngeal fold during phonation which indicate that the fold is the vibrator similar to the vocal cords in laryngeal speech. The authors also commented that the lumen was more centrally located in laryngectomized subjects than in normal subjects; this result might be expected with the removal of the larynx and the subsequent joining of the cricopharyngeus at the front of the esophagus.

The results of this study are very impressive, and really show clearly what Brighton and Boone[2] were trying to show with air-contrast methods. These x-rays are shown in Figure 1 and 2. In the same study Lindsay, Morgan and Wepman[8] were able to show the air reservoir below the sphincter in the esophagus. From the research on this region it is clear that the cricopharyngeus muscle is involved in esophageal speech to a greater degree than the vocal cords are in normal speech, for the cricopharyngeal fold regulates the air flow in and out of the esophagus more than the glottis does in the lungs.

Yet all was not clear about the vibrator in esophageal speech, for there was the case presented by Clerf and Putney[3] and also there were other workers in the field who thought that other vibrating locations should be given more consideration. Dornhorst and Negus[5] reported a case in which the top of the esophagus as well as the larynx was removed; the patient developed good esophageal speech, demonstrating that something besides the cricopharyngeus can be the sphincter, for there was no cricopharyngeus left. Another example of atypical (and inferior) esophageal speech was reported by Moolenaar-Bijl.[12] The patient could speak (poorly) even though x-rays showed that the cricopharnygeus did not relax at all during phonation. Evidently higher musculature was be-



The cricopharyngeal muscle of a normal subject during Valsalva Test. The cricopharyngeus is contracted as shown by the arrow, firmly closing the lumen of the esophagus, (indicated now by a thin streak of barium), against the posterior wall of the larynx (the large shadow anterior to the esophagus).*

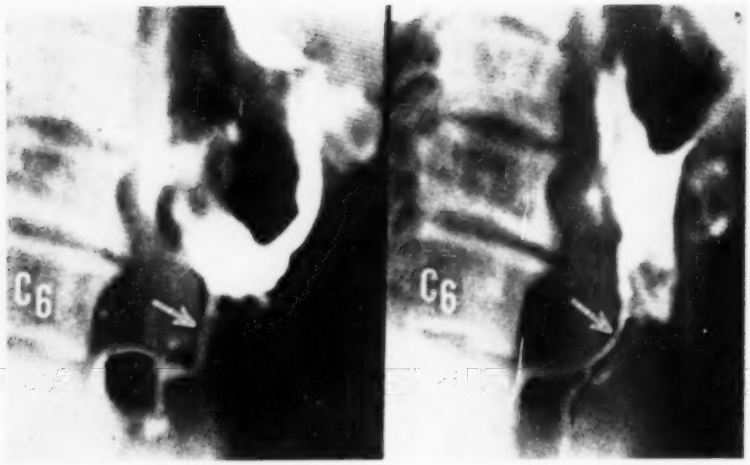
ing used as sphincter, vibrator, and even for propulsion of air. (This patient's speech was greatly improved by causing the cricopharyngeus muscle to take over the role of pseudo-glottis. Although at first the cricopharyngeal fold could withstand pressures in excess of one hundred centimeters of water without eructation, as shown by pumping air into the esophagus through a polyethylene tube and measuring the pressure at which eructation occurred, practice eructation with the tube soon brought the necessary pressure down to thirty to fifty centimeters water; speech therapy helped to produce a normal esophageal voice.)

Thus, although much is known about the mechanism of the ordinary esophageal voice, very little is known about the factors which help to create it or those which cause variations. Robe, Moore, Andrews, and Holinger[14] published a long paper studying the role of various factors in the development of speech after laryngectomy, among which was the location of the pseudo-glottis. After a review of the literature, the authors concluded that some new research was needed. Unfortunately the x-rays and the pictures taken of the pharynx during esophageal speech which they presented did nothing but confirm the long standing opinion that the cricopharyngeal fold is the usual site of the pseudo-glottis.

Robe et al.[14] investigated the role of the type of laryngectomy performed in subsequent esophageal speech in twenty-three cases, and could find no correlation. The most interesting result was that wide field laryngectomy and radical neck surgery did not seem to hinder in the development of esophageal speech. Some earlier writers had thought that it was a good practice to sew the thyrohyoid and sternothyroid or sternohyoid muscles to the front of the pharynx at about the level of the cricopharyngeus muscle, with the idea that contraction of these muscles could help the opening of the sphincter. Robe does not have enough patients to show that this procedure is of no benefit, but she does show that it is not essential.

Thus the studies of the localization and mechanism of the phonation have not been able to demonstrate the causes of variance of speech ability. There are of course psychological factors and the general physical condition of the patient to be considered; and these are probably quite important: patients get discouraged at a lack of a quick initial success in a lengthy voice development program and then never reach the level of which they are capable; many of the laryngectomy patients are elderly and have less drive to learn the alternative speech, and also are weaker in general.

*Illustrations from The Cricopharyngeous Muscle in Esophageal Speech, by John R. Lindsay, M.D., et al. Laryngoscope, 54:57-59, Feb. 1944.



Esophageal Speech—(a) During swallowing or inspiration of air into the esophagus. The pharynx is dilated, the lumen at the sphincter opens for a fraction of a second (arrow) allowing air to pass down into the upper esophagus. (b) During phonation. The pharynx is less dilated and the lumen is slightly open at the sphincter. The cricopharyngeus muscle appears less acutely contracted than in (a) as denoted by the less acute curvature of the lumen.*

There is another area in the study of mechanisms which is developing and which may prove very fruitful, that is, the study of intake mechanisms, and the synchronization of esophageal speech with breathing. The problem of the intake of air into the esophagus and the coordination of intake with breathing has been quite controversial. As shown in the review by Robe, various workers in speech therapy have indicated that synchrony of phonation and expiration are to be avoided. Some held that the noise of expiration through the tracheostomy would tend to impair the quality of the speech; one author indicated that the pressure on the esophagus would be reduced by expiration. When studies were done on effective esophageal speakers, however, it was shown that phonation always coincided with a vigorous expiration.

Bateman and Dornhorst[3] reported expiration-phonation synchrony in patients having well developed esophageal speech. In all three individuals phonation, recorded graphically, coincided with expiration as recorded by a pneumograph. The correlation between the results of the pneumograph and those of a spirometer were reported in an earlier publication. In the same paper, the authors showed that laryngectomized patients can create a positive pressure in the thorax up to thirty to fifty millimeters of mercury, even with the tracheotomy open, and that with no additional esophageal muscular pressure this pressure was sufficient to give propulsion to air in the esophagus for esophageal speech. This phenomenon would explain the synchrony between expiration and phonation, and it is explained by the hypothesis that the bronchioles offer effective resistance to a sudden expiration. Moolenaar-Bijl[9] reported that deep expiration occurred with each phonation in two subjects with very good esophageal voice; the experiment was carried out with a spirometer at the tracheostomy for expiration, and one at the mouth and nose for phonation. Robe et al[14] confirmed the results on a larger group of subjects using a technique almost identical to that of Moolenaar-Bijl. Thus, although it is certainly true that totally new speech habits are formed while an individual learns esophageal speech, the contention that the familiar synchrony between phonation and ex-

piration should not be continued is doubtful.

Moolinaar-Bijl[9] studied different types of air intake with the spirometer method. The two methods usually recognized are swallowing and aspirating. The first involves simply swallowing air much as in swallowing anything else, and is quite clumsy in esophageal speech, for it necessitates frequent audible interruptions of speech. The spirometer showed that air intake was fairly independent of tracheal breathing, and that only during the swallowing or phonation did the amount of air in the esophagus change, the sphincter remaining closed at all other times. In the sucking or direct aspiration technique, on the other hand, the sphincter acts as if it remains slightly open at all times: the amount of air in the esophagus parallels that in the lungs at all times, in quiet breathing and in speech. (Perhaps the different opinions about synchrony of speech and breathing arose from thinking of these two methods of air intake; in the former, intake could be separated from inspiration, whereas in the latter it could not).

Of the two methods, Moolenaar-Bijl preferred the direct aspiration method. In 1951, however, she published a preliminary paper[9] on a third method of inspiration which she thought might prove superior to the others. In 1953, she published a report[10] of the success of the method of injection aspiration, in which the consonants *p*, *t*, and *k*, are found to cause slight motions of the tongue and palate which force air into the esophagus. This technique came to Moolenaar-Bijl's attention when a patient demonstrated that he could say *pah* many times in succession without exhausting the esophageal air supply. The fact that these consonants aided aspiration had been mentioned in the literature before, but had not been emphasized. Moolenaar-Bijl had her patients start their speech training with these consonants with the intent of leading to fluent esophageal speech without resorting to less natural methods, for once the movement of the mouth was learned, air could be injected into the esophagus quite easily and inconspicuously, both when the consonants were used, and at other times thus keeping up the supply of air. In the 1953 paper, Moolenaar-Bijl[10] reproduced x-ray films of the esophagus of a subject using the injection technique, which supported her statements about the constant refilling of the air reservoir. Unfortunately she did not include spirometric data of the subject's speech so that no idea of the synchrony of speech with inspiration and expiration of the lungs can be gathered. The interesting remark was made, that the patient who was most proficient at the injection method "kept the maximal expansion of the thorax as long as possible," which at least hints at a lessened dependence on thoracic expiration for phonation.

In another publication in 1956, Moolenaar-Bijl et al.[11] mention a cineradiography with synchronous sound which they had made of this type of speech, which bore out the statement that a backward movement of the tongue forces air into the esophagus in the injection technique. In this paper, the authors stated:

> "This method was studied in detail by recording synchronously (1) pressure in the pharyngeal cavity (2) pressure in the esophagus, and (3) sound pressure. A rapid rise of the pharyngeal air pressure (about 35cm. water) was seen before each sound, followed by a rise in the esophageal pressure (to about 35cm water). During the articulatory movements for preparing an explosive consonant, air is forced from the pharynx into the esophagus . . . The injection of air is contrary to what happens in swallowing, as the palate is closed firmly from the beginning and the air finds a reflectorily closed mouth of the esophagus in its path. The patient must learn to abolish the reflectory contraction before he 'finds his voice.' "[11]

This well-documented method of injection seems to present great advantages, but a more widespread trial must be carried out before it is considered completely successful. (Moolenaar-Bijl mentions[10] that Moore prefers the direct inhalation method to the injection method.)

From this general discussion of the subject

of esophageal speech it can be seen that much is known and much remains to be learned. Is it not possible that some surgical measures on the cricopharyngeus muscle during the operation would improve the resulting pseudo-voice? Remembering Dornhorst and Negus's[5] case of esophageal speech without the cricopharyngeus muscle and Moolenaar-Bijl's case in which very strong contraction of the cricopharyngeus had to be overcome,[12] it seems possible that a weakening of the cricopharyngeus might prove helpful, at least in some cases, for the primary sphincter function of the muscle is no longer important (preventing air from reaching the esophagus).

An attempt might be made to correlate treatment of the cricopharyngeus muscle in the laryngectomy with subsequent speech.

Summary

The various studies on esophageal speech present a fairly consistent picture of esophageal speech. It appears quite certain that in many cases of esophageal speech the cricopharyngeal fold does serve as the pseudoglottis and that in other cases of esophageal speech (sometimes equally good) it does not serve as the pseudoglottis. The esophagus forms the main air reservoir, and intrathoracic pressure transmitted into the esophagus provides the force to propel the air through the pseudoglottis and cause speech. The cricopharyngeus muscle normally serves as a sphincter to prevent air from reaching the esophagus, and must be trained for new functions: controlled intake and outlet of air. The direct inhalation method seems to be superior to the swallowing method of air intake into the esophagus, and the Moolenaar-Bijl injection method appears to be the best contribution to the field in many years, and quite an improvement over either of the other methods.

However, more evidence is needed to substantiate this last statement.

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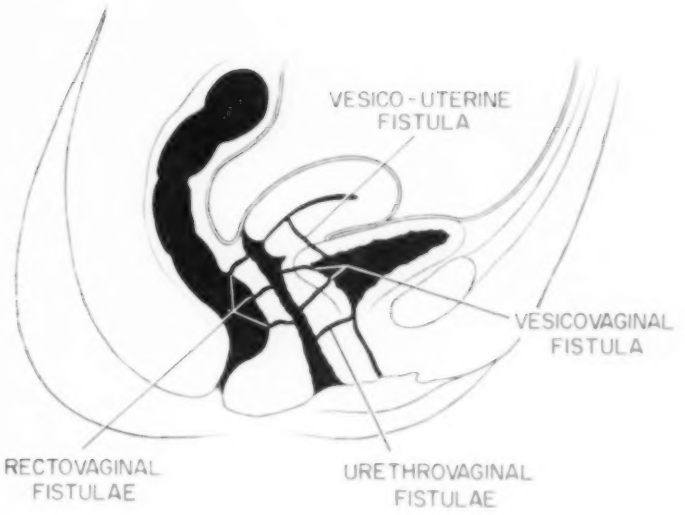
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314 Overhill Road

CLINI-CLIPPING

Vaginal Fistulae



Carotid Sinus Syncope

JAMES B. TWYMAN, M.D., F.A.C.P.
Charlottesville, Virginia

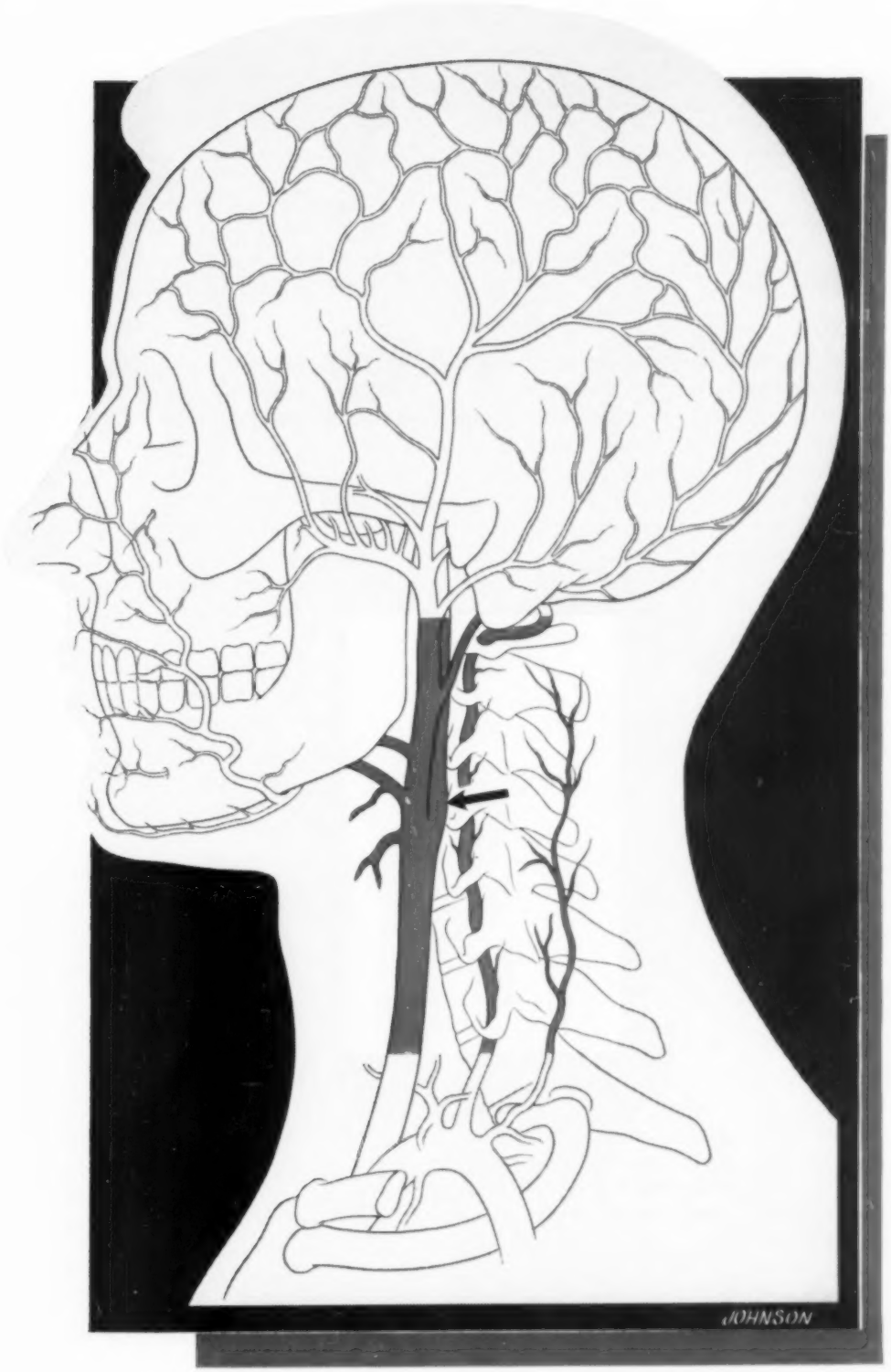
Loss of consciousness, either with or without seizures, is a problem which is continually presented to the practicing physician. A vast majority of such patients may require special diagnostic studies. However, a patient with a hyperactive carotid sinus may be easily diagnosed with a minimum of equipment, either in the office or at home.

The carotid sinus is usually found at the bifurcation of the common carotid artery, which is located just posterior and medial to the angle of the jaw. Rarely, anomalies do occur with the bifurcation being situated somewhat lower in the neck. Usually a small protuberance, a carotid tubercle, acts as an exact anatomical landmark. However, individual variations exist and must be kept in mind.

The patient should be examined in a sitting position; yet care should be taken that a fall or injury does not occur if loss of consciousness results from pressure being exerted on the carotid sinus. The neck should be extended with the chin slightly elevated and turned away from the side to be massaged. Fairly firm pressure for five to ten seconds should reproduce the symptoms, usually with syncope. If such does not occur, then the opposite side may be tested in a similar fashion after a delay of about five minutes. *Never should both sides be stimulated simultaneous* since hemiplegia and cardiac arrest with death, can occur. Also, any person suspected of thrombosis of the internal carotid artery should not be tested, since pressure on the patient's nonaffected common carotid artery would occlude the major source of cerebral blood flow.

The equipment required in testing carotid sinus hyperactivity is available to every physician in active practice, namely: a sphygomanometer, stethoscope, and a watch with a second hand. An electrocardiogram with tracing verifying cardiac slowing or arrest is helpful, particularly in differentiating the three types of carotid sinus syncope.

Weiss and his co-workers[1] divide syncope associated with hyperactivity of the carotid sinus into three categories, namely: 1. The vagal type producing bradycardia and even asystole. 2. The depressor type in which there is vasodilatation with lowering of the blood pressure. 3. The cerebral type in which cardiac rate and blood pressure are not appreciably affected, though faintness, dizziness, numbness and tingling of the extremities, pallor of the face, hypernea or even convulsions may be the symptoms noted. The first type, which can be blocked by atropinization, is clearly mediated through afferent fibers known to connect the


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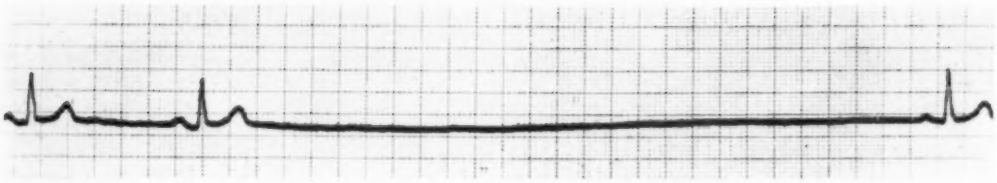


FIGURE I. Carotid Sinus Syncope (Vagal Type) with S.A. node arrest of 5.4 seconds produced by massage of the right carotid sinus.

carotid sinus with the vagus and in turn with the cardioinhibitory center in the medulla. The second type is mediated primarily by fibers known to connect the carotid sinus with the superior cervical ganglion of the sympathetic chain. Small doses of Adrenalin® will abort an attack of this type of over-activity of the carotid sinus, but atropine is without effect. In the third type, the exact neurological site of activity is not known. Adrenalin and atropine are without effect, but procaine infiltration of the sinus prevents attacks previously produced by local stimulation.

Two cases illustrative of two types of carotid sinus syncope are presented in the following paragraphs.

Case One

R.F.P., a fifty-three-year-old white salesman, was admitted to the hospital because of recurrent, weak spells associated with loss of consciousness on at least two occasions. During the past three months he had fallen twice, but had not injured himself. Often he had felt weak and as though he might pass out, but such had not occurred. There had been no definite aurae of any sort. He had had some recurrent headaches, but these had not been related to his syncopal attacks which had occurred shortly after eating. Definite seizures were denied. The patient did lose control of his urine on one occasion. He had an allergic history of asthma and hayfever precipitated by the inhalation of dust. Both of these along with his sinusitis had been much better in the past five to six years. As a child, episodes of fainting were fairly frequent and associated with increased emotional tension. There was no familial history of epilepsy.

Physical examination revealed a well developed and nourished male with no abnormalities on general physical examination.

Laboratory data showed the hemoglobin, white blood and differential counts, sedimentation rate, hematocrit, fasting and a two hour post prandial blood sugar were all normal. The skull films and electroencephalogram were not remarkable. The electrocardiogram was within normal limits. However, on massage of the right carotid sinus there was cardiac arrest for 5.4 seconds. (See Figure I.) The patient felt weak as though he may pass out.

Shortly after massaging the carotid sinus, the patient was placed on fairly large doses of belladonna, and the test was repeated sixteen hours later. No affect on pulse or blood pressure was noted. He was discharged on tincture of belladonna, ten drops, four times a day.

During the next nine months the patient did well and had only one mild episode of syncope while shaving. This took place at a time when he had on his own, discontinued his belladonna.

COMMENT: This patient represents the type 1 hyperactive carotid sinus due to increased vagal activity which was readily alleviated by the use of belladonna.

Case Two

Mrs. P.E.K., a fifty-six year-old widowed, white lady was seen in consultation on her fifth hospital day because of recurrent episodes of syncope. She had been hospitalized on January 3, 1952, with acute cholecystitis. For many years, this patient had had occasional episodes

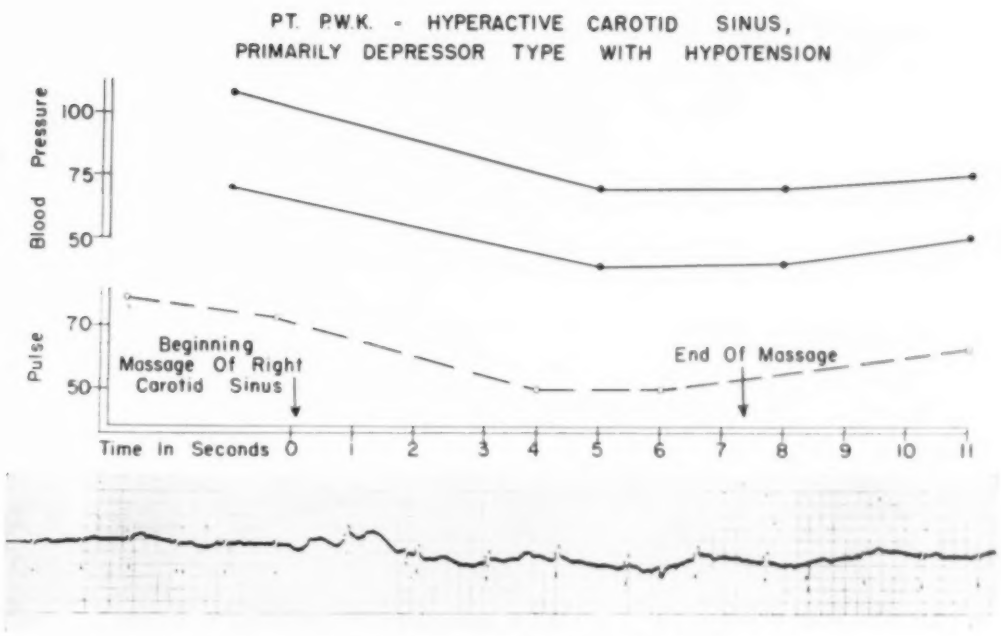


FIGURE II. EKG-Lead A.V.R. — Showing arrest of S.A. node with ectopic pacemaker below A.V. node — QRS interval = 0.1 sec.

of fainting. During the six to eight months prior to hospitalization, and in association with repeated flareups in her gall bladder disease, loss of consciousness had occurred frequently. During the first five days in the hospital, she had had recurrent "shock-like episodes" lasting two to four hours. The fasting blood sugar had been normal, and one drawn shortly after intravenous glucose and during one of her syncopal attacks was 176 mgm.%

At the time of my initial examination, the resting blood pressure and pulse was 110/70 and 76 per minute, respectively. Figure II graphically demonstrates the effect of right carotid sinus massage on the blood pressure. The pulse is also seen to drop to 50 per minute and the electrocardiogram demonstrated sino-auricular node arrest. Loss of consciousness was produced by the above procedure, but no appreciable affect was noted when the left carotid tubercle was massaged.

Atropinization and the use of ephedrine eliminated her symptoms. A cholecystectomy was performed uneventfully seven days after treatment was started. A followup examination in September of 1958 revealed no evidence of hyperactivity of her carotid sinus. She had had no further syncopal attacks and was on no medication at that time. Because she had felt so well, the ephedrine had been omitted about six months after being discharged from the hospital and the belladonna had been discontinued by the patient without any untoward effect.

COMMENT: The exact significance of this patient's recurrent gall bladder disease on her attacks of carotid sinus syncope is difficult to prove. Her subsequent relief of symptoms following the cholecystectomy would support the thesis of increased vagal action making for her irritable carotid sinus. However, the blood pressure fall with the shift in the cardiac pacemaker are less easily correlated with the physiological classification of Weiss.[3]

Treatment: If increased activity of the vagus with slowing of the heart and cardiac arrest is found, the patient's symptoms usually can be

readily controlled with atropine, belladonna, or the newer synthetic analogues.[10] If fall in blood pressure is primarily produced, ephedrine like drugs or more recently isopropylnoradrenalin can be prescribed.[2] Since recurrent episodes of fainting often make for increased nervous tension, the use of sedatives or tranquillizers may be necessary, not only because of the patient's nervous tension, but also to offset the side effects of ephedrine or similar drugs that may be employed. All mechanical sources of pressure should be eliminated; if intrinsic, i.e., calcified or enlarged nodes in and adjacent to the carotid sinus should be removed. If the source is extrinsic, i.e., stiff collars, chokers, etc., their use should be scrupulously avoided. In the male, as illustrated by the first patient, care not to massage the carotid sinus during the course of shaving should be kept in mind. Digitalis or hypoglycemia, due either to insulin or functional derangement of the autonomic nervous system, may sensitize the carotid sinus.[1, 3, 4, 5, 6, 7] Except for severe heart failure, the digitalis group of drugs are contraindicated. Functional fluctuations in the blood sugar can be avoided by restricted carbohydrate intake and an increase in the amount of protein ingested at mealtime. If medical therapy does not control a sensitive carotid sinus, surgical denervation is indicated.[4] In the past, irradiation of the carotid sinus has been tried, but such reports are indeed scarce.[9]

One other complication of the hyperactive carotid sinus deserves attention, namely; cardiac standstill during anesthesia. This dramatic and too often fatal complication is estimated to occur once during the lifetime of an active surgeon or about once in every ten thousand operations. Two factors which play a role in cardiac arrest are: 1. Manipulation of the neck and head with inadvertent massage of the carotid sinus area, particularly during the induction phase of anesthesia.[3, 8] 2. Also, certain types of anesthetics have been reported to sensitize the carotid sinus.[8] Nitrous oxide and thiopental sodium have been under scrutiny for this reason. Care on the part of the anesthetist in avoiding the carotid area will remedy accidental carotid sinus massage. Increase in the preoperative dose of atropine to one or even two mgm. would do a great deal to alleviate increased vagal activity.

Conclusion

Any person who complains of fainting or loss of consciousness should be checked for hyperactivity of the carotid sinus.

This diagnosis can be readily made with equipment available to every practicing physician. The results of therapy is usually most gratifying, not only to the patient but also to the doctor as well.

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400 Locust Avenue

THOMAS P. WEIL, M.P.H.
Garden City, New York



Current Points of View and Problems

Voluntary Health Insurance

We have witnessed a phenomenal growth in the field of voluntary health insurance in the last fifteen years. In 1943, twenty million individuals had hospitalization coverage and eight million had surgical benefits. Today, one hundred twenty-one million persons are protected against the cost of hospital expenses, one hundred and eight million are covered for surgical fees, sixty-five million have policies covering regular medical expenses, and about nine million are insured against major medical expenses.[1] Growth in enrollment and extension of benefits undoubtedly will continue.

This paper will summarize the current points of view of those who help finance or provide medical care services: physicians, hospital administrators, medical care consultants, officials of third party agencies, labor leaders, employers, and others. It is hoped that a review of diverse opinions concerning third party payments will help the physician to better guide the future destiny of voluntary health insurance.

History

Prepaid medical care coverage is a rather recent development in the United States. Such plans started in Germany and Great Britain around the middle of the nineteenth century. The commercial insurance companies in the United States only began underwriting indem-

nity plans in the early 1900's. Group indemnity or loss of income policies, with numerous variations and combinations of coverage (depending on the desired benefits and actuarial risk), first became available prior to the First World War. The average policyholder's major objection to these group and individual indemnity plans was that the policies furnished cash payments that only partially paid the hospital room and board expenses and the surgical fee, rather than providing actual medical care services.[2]

Community non-profit hospitalization programs, which were later called Blue Cross Plans, were organized throughout the country after the 1929 crash. Numerous county and state medical societies during the latter part of the 1930's were stimulated to inaugurate Blue Shield plans, a "sister" program to Blue Cross, to extend benefits for physician visits in the hospital and for surgical procedures. Probably, the two major advantages of the "Blues" for the consumer of medical care are: (1) for individuals and families within a given average income these plans usually provide full payment for actual medical and hospital services; (2) in most plans, everyone pays the same subscription rate (there are a few experience-rated "Blue" plans).

Until the last few years, enrollment in Blue Cross and Blue Shield plans grew at a tremendous rate. At the end of 1957, there were eighty-six Blue Cross agencies in the United States with fifty-four million subscribers; forty-five million individuals had Blue Shield coverage. Almost all of these plans during the past five years not only have extended their benefits, but have added special groups and individuals to their membership.[3, 4, 5] These community non-profit plans are continuing to play an important role in the financing of medical care services.

For the physician, though, there have been some dissatisfactions. The general practitioner and the internist complain that most medical prepayment programs are basically surgical plans and that they are discriminated against, because the value of medical vs. surgical care is not equated. Exploratory laparotomies and exploratory thoracotomies, where no definite therapy is done, produce sizeable checks for surgeons. Yet these plans do not cover diagnostic work-ups and preventive medicine. Another argument against the basic plans is that the same emergency treatment and x-ray services are paid for if received in a hospital, but not in the physician's office. Although a physician's visits to a hospitalized patient are paid for, house calls and office visits are not included among the benefits. Many physicians feel that extending benefits for ambulatory care would not be as expensive as anticipated by the prepayment agencies. They claim that some of the present over-utilization of hospital beds would be curtailed thereby.

Major Medical Coverage

During the last five years, commercial insurance companies have shifted their sales emphasis from the indemnity or loss of income contracts to the major medical expense and "comprehensive" plans with $5,000 to $10,000 maximum benefits. Major medical expense or "catastrophic" insurance was started in August 1948, when the Elfun Society, a voluntary association of General Electric Company management officials, had the Liberty Mutual Insurance Company underwrite a policy for "catastrophic" illness.[6] These policies are designed primarily to supplement a basic Blue Cross-Blue Shield type plan, rather than to give just routine hospitalization and surgical coverage.

The benefits of a major medical expense plan include the professional services of physicians whether in the hospital, in the doctor's office, or in the patient's home with no set fee schedule. Thus, coverage in these newer plans includes all the benefits of a basic

Mr. Weil is an Associate Consultant, John G. Steinle and Associates, Management Consultants, Garden City, Long Island, New York and presently is on leave of absence to take his Ph.D. in public health economics, University of Michigan, Ann Arbor. He is a graduate of Yale University's Course in Hospital Administration and was S. S. Goldwater Fellow in Hospital Administration, The Mount Sinai Hospital, New York City, when preparing this article.

Blue Cross and Blue Shield contract without the "Blue" plans' limitation of a maximum number of hospital days or on the extent of special services. In more than ninety percent of the major medical plans, there are no surgical fee or room and board schedules. These policies also cover the costs of prescriptions filled at a retail pharmacy and of nursing services, either as "specials" in the hospital or visiting nursing services.

In an attempt to minimize the number of small medical claims, the insurance company has to process, more than ninety percent of the major medical expense plans have a "deductible" clause similar to that of automobile collision insurance. Commercial carriers have felt that with $5,000-$10,000 benefits available, there should be some control on the quantity of medical care given a policyholder. This control is the "co-insurance" feature included in almost all major medical plans. The insurance company pays seventy-five to eighty percent of all medical care expenses above the "deductible" amount, with the remaining twenty to twenty-five percent being paid by the insured.

The newest form of commercial coverage is "comprehensive" or "low deductible" major medical insurance. This type of policy eliminates the basic Blue Cross-Blue Shield contract and has only the "deductible" and "co-insurance" feature. Group "comprehensive" insurance plans now are being underwritten with a $25 "deductible" clause and an eighty to twenty percent "co-insurance" feature.

The benefits of a basic Blue Cross-Blue Shield plan are generally adequate for a routine, short-term hospital stay, but lack coverage for an extended illness, or care on an ambulatory basis.[7] Major medical expense insurance closely "integrated" with a basic plan or commercial "comprehensive" insurance is a positive approach to comprehensive prepaid medical care coverage.

The Insurance Industry

Spokesmen for the insurance companies such as Andrews,[8] Cody,[9, 10] Follmann,[11, 12, 13] Miller,[5] Whittaker,[14] and Wilson,[6, 15] to mention only a few, have been enthusiastic about the major medical policy. Whittaker,[14] a Vice President of the Prudential Insurance Company of America, said: "Group Major Medical Insurance is, in my opinion, the most important development in Group Insurance in a generation."

Insurance officials have mentioned on numerous occasions that it is rather unfortunate that the "deductible" and "co-insurance" features, the two negative concepts of major medical, have been so widely publicized. They feel that the insurance companies' emphasis should be placed on the very broad definition of the types of medical care charges which are insured, rather than on the more negative features of the major medical contract.

Although there is no set fee schedule, the insurance companies' experience with medical and surgical fees under major medical policies generally has been favorable.[16] Prudential reported that medical and hospital claims among its own employees was satisfactory, though nursing care was a larger expense than was anticipated.[17] The experience to date of the General Electric Company's "comprehensive" plan, with 600,000 employees and dependents is encouraging.[18, 19] However, it will take several years before sufficient actuarial information will be available as a basis for any definite conclusions.

Blue Cross

Van Steenwyk,[20] an Executive Director of one of the large Blue Cross plans, in an article entitled, "The Dilemma in Catastrophic Insurance," discussed the problems Blue Cross would face if they were to go into major medical insurance coverage. He noted that the same need for catastrophic health insurance coverage existed when Blue Cross was in its infancy. Also, he raised the main questions behind major medical—should the "Blues" emphasis be placed on reimbursing the minimal or maximum medical care expenses? What price is the public willing to pay for such coverage?

Still, some observers feel that Blue Cross and Blue Shield plans must drastically extend

their coverage in the next few years or the more preferred groups will be underwritten by the commercial carriers. What conceivably could happen is that the "Blues" will end up with a high percentage of poor risks (those over sixty-five years of age), which would result in a high subscription rate for the community.

Davis[21] recently stated that if Blue Cross began swinging toward cash indemnities and experience rating, rather than maintaining the principles of service benefits and community rates, it "might help some Blue Cross plans to save their shirts today, but will cause them to lose their pants tomorrow." When one closely examines the actuarial problems of group major medical, one realizes that tremendous reserves are needed to insure that this program will be workable. The "Blues" will have to pool their resources if they decide to go into the major medical field. If Blue Cross is able to reorganize nationally and extend its service benefits, it can meet the competition of the commercial carriers.

Industry

Industrial officials learned many years ago that healthy employees not only mean better employees, but also lowered costs because of fewer and shorter absences due to illness and injury.[22] Enlightened employers, throughout the United States, are attempting to improve health and safety conditions for their employees. However, they are interested in keeping such costs to a minimum so as not to damage their earning capacity.

Point of View of Unions

Union leaders in the United States have continued to bargain for comprehensive prepaid medical care benefits to be paid by the employer. Labor unions in the past have pointed out that basic hospital and surgical policies generally promote over-utilization of hospital facilities, frequently resulting in expensive coverage which fails to cover the employee and his family for medical care expenses outside the hospital. In an attempt to extend coverage for ambulatory care, several large labor organizations in metropolitan areas have built their own union health centers, or have joined such cooperatives as New York's H.I.P. or St. Louis' Labor Health Institute.

Major medical insurance has been vigorously opposed by the unions,[23-29] since they fear such policies would "undermine health insurance by misdirecting its effort and critically inflating its cost."[23] Union leaders reject major medical insurance asserting that such plans impose economic pressures on subscribers by attempting to control medical care by economic rather than medical means. Labor alleges that major medical plans discourage prompt use of medical facilities in the early stages of illness and gives a financial incentive for waiting until the illness is a major one. Instead they refer to the plan as "minor" medical—though most of the medical expenses of an employee and his family are small, these minimal expenses add up to the largest proportion of his total medical cost.

Even when major medical insurance is integrated with a basic Blue Cross-Blue Shield type plan some "gaps" remain in medical care coverage. Among these "gaps" are routine care of minor illness, preventive medicine, and other items of budgetable expense. Union leaders believe that non-salaried employees with limited savings, when ill, cannot afford both the loss of income and at the same time, pay the "deductible" and "co-insurance" amounts. The A.F.L.-C.I.O. report on "Catastrophic Illness Insurance"[29] questioned whether this insurance greatly increases the patient's ability to pay. Instead, the report noted that such insurance is likely to lead many physicians to charge patients considerably more than would have been the case in the absence of such coverage.

Certain labor groups have hailed the "comprehensive" or "low-deductible" major medical expense policy as a step in the right direction. Labor approves of this approach to the total sickness bill, but does not consider it a final solution. John V. Crews,[30] Vice President of the Benefit Association of Railway Employees, said, "Co-insurance isn't necessary on hospital expenses and it is possible that it can be minimized under major medical. Co-insurance is today's method of meeting today's problems.

However, the economic factor from the standpoint of the individual has to be taken into account. Under the present state of development, co-insurance is necessary, but in viewing possible future trends the insured's problems also have to be anticipated."

Most insurance officials do not consider the major medical expense or the "comprehensive" policy the final answer in its present state of development.[31] In the individual major medical insurance field, St. Paul Mercury underwrites a policy without a "co-insurance" provision and sets the "deductible" amount as low as $200-$250. Other companies like Fireman's Fund reduce the "co-insurance" feature after specific maximums are reached.

The labor unions have also been concerned with the quality of service given to their members under these prepayment plans. Brindle[24] recently pointed out: "While complete prepayment and the comprehensiveness of benefits have important quality implications, direct consideration must be given to the quality of medical care. Certain quality controls must be built into the medical care program."

While labor unions, on the one hand, desire to extend benefits, they have, on the other hand, in state insurance hearings in Michigan, New York, and Pennsylvania spoken against Blue Cross Plans raising their subscription rate. With hospital expenses rising at a greater rate even than the Consumer's Price Index,[32] the "Blues" argue that they must obtain some increases to meet these added costs. With enrollment in major medical and "comprehensive" plans growing at an unprecedented rate in comparison with other types of prepaid medical care, the "Blues" must extend their coverage to meet this competition.

Group Practice

Additional union health centers or community health plans have been suggested by some labor officials as a possible answer to the drive for comprehensive care. In most union health centers, less than fifty percent of the eligible members come to the center even once a year.[33, 34] The cost per service rendered in these centers is by no means inexpensive. Weinerman[35, 36] stated that the "group practice health center method represents a decided advance over traditional solo practice, fee-for-service patterns, as far as organized prepayment plans are concerned."

Dr. Russel V. Lee,[37] director of the Palo Alto Clinic in California, has noted that "attempts to provide really comprehensive care without utilizating the group practice principle have had very rough sledding. Over-utilization, padded accounts, policing problems, have caused many to say that it cannot be done. . . . Then why hasn't group practice 'paralleled the incredible growth of prepayment?' Dr. Lee gives three reasons: (1) 'Group practice . . . suffers from its own sins of omission and commission. Faulty organizational systems, inefficient or selfish operation gives the movement no help. (2) Part of the difficulty in achieving more universal acceptance of group practice lies in the nature of physicians, in their traditions, and in their training. (3) The third impediment to group practice comes largely from without and stems, I am sorry to say, usually from organized medicine.' "

The Physician

As early as 1938, the American Medical Association in its Program for the Advancement of Medicine and Public Health pointed out the need for further development and extension of voluntary hospital and medical care insurance.[38] The A.M.A., through all these years, has remained as a watchful guardian over the medical services available to the American public and has not hesitated to denounce any form of prepayment that its members thought might be prejudicial to good medical care.

Early in 1954 the A.M.A. Committee on Prepayment of Medical and Hospital Services surveyed physicians throughout the country as to their thoughts about health insurance.[39] Most of the responding physicians favored insurance coverage for a "substantial portion" of surgical and medical care, but less than the full cost. The "co-insurance" feature was endorsed by a majority of the physicians. This is incom-

patible with labor's desire for service contracts. The benefit schedules of service contracts in many regions in the United States seem to be slightly closer to the normal charges of the general practitioner than to those of the full-time specialist. Viewed from the standpoint of fees based on ability to pay, these benefit schedules are more in line for the low income families, than the average income group.

One problem of great concern to labor unions and agencies that reimburse physicians for their services, is that doctors are likely to charge more than their normal fee for the insured patient. Half the physicians answering the A.M.A. survey expressed the belief that the sole reason for such fee raising was the opportunity to obtain more money. If this is true, perhaps the labor unions are justified in their fear that major medical policies will have an inflationary effect on medical care expenses. Some surveyed physicians felt that they should be compensated for the extra trouble or expense involved in handling third party claims. Yet, others believed that this expense should be accepted because, in the long run, the general availability of insurance benefits means fewer unpaid bills and costs of collection efforts.

During 1956, Wheatley[40] and several of his medical colleagues participated in a number of informal sessions with small groups of medical leaders and at county medical society meetings to "feel the pulse of the medical profession regarding health insurance and to put us in closer touch with attitudes at the medical grass roots." These sessions seemed to be well received. Often the comment was made that such meetings "should be held more often" or "should have been held long ago." On many occasions these groups expressed the need for some type of educational program both for the medical profession and the public. Another frequent comment was that organized medicine must help if prepayment is to succeed.

Wheatley[40] sums up the disturbing problems that must be dealt with if further progress is to be made in methods of financing medical care as follows: "Misuse or abuse of health insurance is a serious problem. . . . Because of insurance, pressures are brought on doctors to carry out procedures that the doctor frequently considers unnecessary. . . . The pressure of 'I'll go elsewhere' has an impact on the pocketbook of doctors. . . . One of the reasons why misuse occurs consists in the specifications of certain insurance contracts. . . . Broadened coverages are possible without higher premiums if insurance is not misused. . . . Education for doctor and patient is imperative if the prepayment program is to succeed. If voluntary insurance becomes too costly, compulsory Government insurance is not far off. As one physician said, 'The time has come when we must wise up the doctor and wise up the patient or else.' "

Many of these comments suggest that both the medical profession and the public need to obtain a clearer understanding of the problems of financing physician and hospital services. Physicians should be made aware of the effect of raising fees merely because insurance benefits are available: third party agencies cannot hope to keep pace with the continual upgrading of medical care expenses. Wheatley[40] summarizes the threat of a government health system when he states: "National compulsory health insurance is not a live issue at the moment in this country, but it is by no means dead. . . . It can happen here, if individual physicians and other interested parties do not assume their proper responsibility for the success of present private efforts."

The Hospital Administrator

Blue Cross and Blue Shield plans historically have been characterized as the "Hospitals' " or "Physicians' Plan." During their more than twenty years of existence the "Blues" have had, in most cases, a close liaison with organized medicine and the hospital associations.

Blue Cross has been an important factor in financing hospital care. The hospital is reimbursed by the Blue Cross agency either at cost or published charges, whichever is the lower. In determining the reimbursement rate to the individual hospital, the hospital's costs for teaching, research, and capital expenditures are

usually excluded. This is due to the fact that Blue Cross in its infancy was not financially able to reimburse the hospitals for such costs. Now, considering their growth in enrollment and their present financial reserves, they should be in a better position to help hospitals finance their teaching and expansion programs.

Most hospital officials have been impressed with the broad coverage obtainable in a major medical expense policy.[41] With these newer forms of commercial insurance, the hospital is reimbursed at its published rates which are generally higher than the Blue Cross reimbursement. Some hospital administrators feel that the "deductible" and "co-insurance" features of major medical and "comprehensive" insurance will result in increased losses on uncollected bills. However, the possibility of the hospital collecting from a long-term chronically ill patient appears promising with a major medical policy, having a $5,000-$10,000 maximum benefit, than the Blue Cross's twenty-one to seventy full days of hospitalization benefits.

Snoke,[42] then President of the American Hospital Association, noted that "one of the most serious unsolved problems facing Blue Cross and Blue Shield plans today involving physicians and hospitals is the method of prepayment for radiology, pathology, anesthesiology, and physical medicine services in hospitals. Disagreement on which program should provide coverage for these medical specialities has existed for years with local and state medical societies as well as the A.M.A. feeling strongly that such services should be covered by Blue Shield."

It is extremely difficult to explain to a patient why he receives third party coverage if anesthesia is provided by the hospital, but not, if the physician sends his own bill. He does not understand why his x-ray in the hospital is covered, yet, if he walks into the physician's private office (across the street from the hospital), he receives no third party benefits. Blue Cross, Blue Shield, the medical societies, and the hospital associations must coordinate their efforts so that this present misunderstanding might be eliminated.

Becker,[43] Snoke,[42] and others[7] have been concerned with over-utilization of hospital beds by those having inpatient coverage, but no medical care benefits outside the hospital. Some feel that the present practice of Blue Cross restricting benefits to inpatients results in patients being admitted to the hospital rather than being treated on an ambulatory basis. The Michigan Blue Cross survey[43] illustrated this point. "One out of eight Blue Cross patients entered the hospital for laboratory or x-ray examinations, although hospital outpatient departments were performing similar examinations on similar patients every day. Over eighteen percent of the Blue Cross patients remained in the hospital in excess of their need."

Some hospital administrators feel that ambulatory benefits would help curtail the present costly expansion of hospital beds. However, others are fearful that such coverage might lower their bed occupancy rate and thereby cause hospital expenses to rise. Although over-utilization of hospital beds may keep the occupancy rate high, it also inflates the premium for prepaid medical care coverage.

Medical Care Consultant

Michael M. Davis,[44] a well-known medical care consultant, stated before the American Public Health Association in 1956 on major medical coverage: "Suppose that 'Major Medical Insurance,' the adolescent child to whom the insurance business has recently developed a passionate devotion, should grow larger during the next few years. I believe such a growth would expedite the political pressures for more tax-supported medicine or for national health insurance. Why? Because 'Major Medical' will fail to meet the needs of over half the population and will be hardly saleable to unorganized and low-income groups. . . . The extension of 'experience rating' in health insurance is also likely to cause unfavorably situated or excluded groups to turn towards political action."

In the same talk, when speaking of the future of medical care, Dr. Davis said, "I am aware that National Health Insurance is not a political possibility at this moment. Its continued ad-

vocacy will be educational and will stimulate useful though less far-reaching steps. Without some such (general tax funds to supplement voluntary mechanisms) major legislation, or without a prompt and large expansion of voluntary comprehensive insurance plans (with or without public subsidy), I feel we shall witness steady piecemeal extension of tax-supported care for categories of disease and categories of people, plus some further growth of various forms of health insurance. Out of this confusing mixture we shall ultimately emerge, but the process will be long; and will be costly in human and financial terms."

Cost

The non-profit Blue Cross-Blue Shield plans and the commercial insurance companies calculate the cost of the plan on the actuarial risk. The Blue Cross-Blue Shield plans have a uniform subscription rate and the commercial insurance companies' premiums are based on "experience rating" of each particular group or individual. The insurance companies have found that salary classification, age, geographical area, and dependency status are all important factors in determining premiums.[7]

Since the insurance companies work on the principle of "experience rating," they are able to give a preferred rate to the younger segment of the population. Blue Cross has one specific subscription rate and thereby, spreads the risk over the greatest number of persons in the community. This, in some cases, has allowed the insurance companies to underwrite the more favorable risks at a comfortable profit margin and has left the "Blues" to protect the poor risks at a high subscription rate.

Control

The control of medical care benefits is felt by some to depend upon the honesty of the physician. Lull,[45] in an address, "Health Insurance, Medical Practice and the Public," noted that "the medical profession is in the middle—between those reimbursing the physician and the public that desires his services. The actions of a very small number of unethical physicians can affect adversely the entire profession and the success of a prepayment plan. Almost all physicians are sincere in disciplining any unethical physicians and realize that there is more likelihood that he will not overcharge if there is danger of his fees being reviewed by a group of his own peers."

Since the effectiveness of a major medical plan depends greatly on the physician, labor considers the "co-insurance" feature no control, and charges that the insurance industry, management, and labor have passed their responsibility over to the individual. Ironically, some labor leaders ask, can the individual succeed, where these powerful groups have failed to date?

The insurance companies themselves have been concerned about claims-conscious patients who try to exploit illness and make a few easy dollars through excessive health insurance coverage. There also are cases where two or more wage earners in a family each have coverage for the other dependent members. Commercial carriers are aware of the grave danger of duplication of coverage, especially with the large maximum benefits available in major medical coverage. They are watching the situation closely to avoid the condition that already has arisen under the basic plans.

After paying double premiums, is the physician or the family entitled to have full benefits from two policies?[46] The Rhode Island Medical Society states "that doctors who sign insurance forms for extra sickness coverage, just to oblige a patient, are abusing their position of trust. . . . The Society is urging doctors to talk over their patients' insurance coverage when discussing fees. . . . The Society approves pro-rating charges to a sum equal to the doctor's usual fee, whenever the patient has multiple coverage."[47] For example, if the doctor's regular fee is $250 for a given procedure and the patient has two policies, the physician should accept $125 from each carrier.

Within the limited experience of major medical expense policies, instances of flagrant overcharges have been rather minimal, although not unheard of.[48] In such cases, the third party

agencies must take their problems to the grievance committee of the local medical organization. There must be liaison continually between the agency that reimburses the physician for his services and organized medicine. Union leaders are concerned that major medical insurance is almost defenseless against the continual upgrading of medical fees. As Lull[45] states: "With the rapid growth of major hospital and medical expense coverage on a deductible basis combined with elements of co-insurance, it becomes increasingly important that the medical profession and the insurance industry encourage this type of coverage and at the same time maintain and utilize appropriate safeguards."

United Mine Workers

A medical survey in December, 1948, disclosed that in the coal mine regions the practice of medicine on a contract basis led to serious abuses and that three-fourths of the hospitals available to the miners were inadequate.[49] The survey team headed by Rear Admiral Boone of the United States Naval Medical Corps reported that most miners and their families received little or inadequate medical care and many injured persons who might otherwise have been restored to activity we e allowed to go untreated because facilities and services were not available for rehabilitation. The high maternal and infant mortality rates and other health indices indicated that many miners and their families could not afford even basic medical services.

After the survey, ten area officers of the United Mine Workers were established and these made arrangements with local physicians and hospitals in twenty-six States. Since the medical services and hospitals in certain mining areas were deficient, the fund found it necessary to construct its own hospitals.

After several years of experience, the U.M.W.'s executive medical director, its ten area medical administrators, and special consultants found that the quality of medical care given by certain physicians was not meeting accepted standards. They discovered that a few physicians, although licensed to practice surgery, were unqualified by virtue of training or experience to perform certain surgical procedures. For example, one physician had a seventy-five percent normal appendectomy rate. In other instances, they found patients were staying in the hospital for "excessive" periods in comparison to the normal lengths of stay.

In the winter of 1957, the Fund was forced to limit "its payments to physicians and hospitals whose services are necessary and essential in providing the hospital and medical care benefits which it has authorized."[50] After four months, this provision resulted in a sixteen percent decrease in the hospital admission rate, a decrease of seventeen percent in hospital days, a decrease of thirteen percent in total expenditure for medical care, and a decrease of twelve percent in the cost of medical care per beneficiary.

Dr. Warren F. Draper, the Executive Medical Director, has attempted to explain to the medical profession and the general public, that the United Mine Workers' Fund's only intention was to eliminate unnecessary surgery and hospitalization, and that the U.M.W. "had to institute its own controls over the quality of care because the failure of organized medicine to do so."[50] Dr. Draper noted, as well, that the highest quality of medical care can only be provided by men approved by the appropriate specialty board or "other agency similarly qualified to pass judgment."

The local doctors' major grievance against the Fund is that, by publishings a list of "approved" physicians, it damaged the non-approved physicians' reputation and professional standing.

Many physicians question whether the union has the right to decide the matter of medical competence and to eliminate doctors from the Fund's "Blue Book."

Several thousand miners in the Ohio soft coal regions, for example, are protesting because the U.M.W. has drastically cut its list of doctors and hospitals which can receive payment from the Fund.[51, 52] Some miners are comparing this lack of free choice to the old company store technique, that miners battled against for years. If their family physician is not approved by the

Fund, the miner either must pay his medical bill or change doctors.

Many physicians are distressed because the United Mine Workers' Fund is disqualifying some doctors as participants in the program without bringing charges, either through the county medical grievance committee or the hospitals. As the list of approved physicians becomes smaller, the miners' free choice of physicians becomes more and more limited. With the area medical directors writing to doctors to inquire the competence of their colleagues in the community, individual physicians feel that they are being spied on by the U.M.W. A few physicians believe that the Fund is moving in the direction of a medical monopoly with a closed panel group of physicians either working on an annual salary, or on a fee-for-service basis. As a result of all this, the quality of medicine has improved in the mining area, but the controversy has left its scars.

Problem of Senior Citizen Coverage

The most talked about and probably the most difficult issue in health insurance today is that of extending prepaid medical care coverage to those over sixty-five years of age. National health surveys in the past have shown that the aged require more medical care, and percentage wise, have less prepaid coverage than the general population.[53-57] With a higher incidence of illness in old age, and consequently higher costs of medical care, together with an increasing proportion of men and women over sixty-five in the population, finding a method to finance medical care expenses for these senior citizens is going to be increasingly important.[58]

The Forand Bill (H.R. 9567), which would provide funds for medical care through the social security mechanism for all those sixty-five years or older, is under constant discussion in the newspapers and the medical journals. The American Medical Association has opposed the Forand Bill in its present form; yet labor and public welfare organizations have lauded this proposal.[59]

The Forand Bill as introduced in Congress, would be administered by the Secretary of the Department of Health, Education, and Welfare. Benefits would include the cost of medical and surgical services up to sixty days in a hospital, or up to one hundred and twenty days of combined hospital and nursing home care in one calendar year. This Bill was so designed that it does preserve the patient's freedom to choose his own physician.

The American Medical Association is waging a vigorous campaign against the Forand Bill, which it has branded as "socialized medicine." An editorial in the Westchester Medical Society (N. Y.) "Bulletin"[60] opposing the Forand Bill declares: "We hope some combination of voluntary insurance coverage may be the answer. We fear that it will not. We can think of worse threats to the sanctity of medical practice than some well conceived plan to provide financial assistance when needed to the aged ill, short of pauperizing the individual, or imposing serious and impossible hardship on responsible relatives of the aged when such kin are available. The Society is convinced that there is a problem, even in Westchester, and that organized medicine should proceed in the development of a contributory plan to be paid during the individual's working, productive period even administered through the Social Security machinery if need be, to develop on a basis other than tax derivation, health insurance coverage for the individual in his retired years."

Labor leaders have praised the Forand Bill because its mechanism would allow "retired" members to utilize health facilities on a paying basis. Present benefits from the old-age, survivors and disability insurance are inadequate. The average primary benefit paid today to a retired worker is $64 a month; and a retired worker with an aged wife receives only an average monthly payment of $108.[59]

Here's how voluntary health insurance plans deal with the over sixty-five: (1) Independent group-practice prepayment plans in the United States generally have not extended their coverage to their members at retirement. (2) Most of the Blue Cross-Blue Shield plans now allow the pensioner to convert from a group to an individual policy. (3) Commercial insurance com-

panies, to meet the pressures of the public and the Forand Bill, are experimenting to find a prepayment plan. Most available commercial senior citizen policies are beyond the financial resources of a majority of the aged population. "Experience rated" policies require a higher premium from those over sixty-five years because of the substantially higher risk.

The apparent answer appears to be "paid-up" basic and major medical policies at age sixty-five, similar to life insurance. This would allow the senior citizen to pay his health insurance during his productive years, and at retirement, to utilize health facilities on a paying basis without having to continue paying premiums.

Problem of Coverage for Mental Illness

Prepaid medical care coverage for mental illness continues to be one of the major unsolved problems in voluntary health insurance. To date, existing plans discriminate against psychiatric patients and their physicians in prepaid medical care plans.[61] Exclusion of psychiatric coverage permits money to be squandered on unnecessary laboratory and x-ray studies, simply because the policies pay for these services, but discourage psychiatric advice or care.[62]

Blue Cross and Blue Shield coverage for mental illness has made definite progress during the last decade, though many more plans could have extended their benefits in this area of coverage.[63] Commercial insurance companies vary their coverage from no benefits for mental illness to fifty percent of all expenses above $50 to a maximum of $7,500 in one calendar year. Generally speaking, commercial group policies provide the same coverage for all types of illnesses and make no distinction as to private or voluntary, general or mental hospitals.

Why the lack of coverage for mental illness? One argument is that mental and nervous disorders are so prevalent today that they would bankrupt prepayment plans. Also, the difficulty of terminology and in calculating the incidence of mental illness hampers the determination of equitable premiums. In some localities, prepayment plans are unable to provide psychiatric services because of the scarcity or high cost



of such service. The psychiatrist is not able and, therefore, not willing to accept the $3, $4, or $5 fee per visit.

After a study of admissions to the twenty-two-bed psychiatric unit at New York City's Mount Sinai Hospital,[64] and comparing results with those of similar institutions,[65, 66] extending benefits for acute mental conditions in a general hospital does not appear to offer any insurmountable problems to a prepayment plan. However, some additional premium would be necessary. Coverage outside the hospital is generally not yet available because of such unsolved problems as lack of control in determining the appropriate number of visits to be covered, and in deciding when the patient is "cured."

Coverage at the Retail Pharmacy

According to a 1953 national health survey, pharmaceutical purchases amounted to fifteen percent of the estimated national total gross charges incurred by families for personal health services.[53] Commercial insurance companies, with their major medical and "comprehensive" policies, have extended their coverage to prescriptions filled at the retail pharmacy.[67, 68, 69]

This may be a difficult item to control, although insurance companies have stated that their experience in covering drugs in these newer policies has been favorable.[16, 17] The physician and the pharmacist are keystones toward controlling the utilization of pharmaceutical benefits. If the physician or the pharmacist allows the patients to abuse these benefits, either pharmaceutical drugs will be dropped from coverage by these plans, or premiums must be raised to a point where eventually only the wealthy could afford this type of insurance.

Why Not V.N.A. Services?

A two-year pilot study conducted by the Associated Hospital Service of New York found that both patients and physicians were pleased with home care visiting nursing service in lieu of hospitalization.[70] The results of this study indicate that many patients probably could be treated in their homes at less cost to themselves and the prepayment agency. Such benefits might release some hospital beds to those who definitely need the services of a general hospital and might discourage the costly increase of hospital beds.

Many hospital administrators and private physicians are interested in the possibility of reducing the hospital stay of patients by extending care in the home, but directors of visiting nurse agencies, public health administrators, and health officers are skeptical about the possibility of increased demands on their already short supply of nursing personnel.[71] It is doubtful that visiting nurse organizations would be able to meet the increased demand should all prepaid health insurance plans provide coverage for home nursing service at this time. To date, indications are rather varied and need to be more carefully studied.[70, 72, 73]

Coverage for Less Acute Facilities

One of the areas of medical care coverage that needs a great deal of airing, is the feasibility of including nursing homes and convalescent centers in prepaid medical care coverage.[74] If Blue Cross and commercial insurance companies were to extend coverage to these facilities, more patients could be discharged from the hospital earlier and transferred to a convalescent facility. Because adequate care can be provided in a nursing and convalescent center at substantially reduced per diem costs, both patient and voluntary health insurance underwriter would gain financially.

Blue Cross-Blue Shield agencies and the commercial insurance companies have hesitated to extend health insurance benefits for nursing and convalescent home care. The problem here is that of distinguishing between those patients medically needing convalescent care, which should be part of prepaid medical care coverage, and those utilizing such facilities for domiciliary or custodial purposes. Another major problem is the present standards of nursing homes in the United States.[75, 76]

Specific standards will have to be established to decide what constitutes a nursing home. This

could entail setting up an organization similar or attached to the Joint Commission on Accreditation of Hospitals. All nursing homes that have been accredited by such a commission would be eligible for reimbursement by a third party. This would tend to accelerate the raising of standards of nursing and convalescent homes in the United States.

The Future

Indications are that in the future all prepaid medical care plans will increase in enrollment and in benefits. Of course, there always will be a small group of individuals not covered by voluntary health insurance, but this percentage of the population will decrease. With the enrollment in "catastrophic" plans growing at its present rate, it is conceivable that more than seventy million individuals in the United States could have this type of coverage within the next decade.

Commercial insurance companies will continue to experiment with major medical and "comprehensive" coverage. In the next ten years more policies will extend one hundred percent coverage for inpatient expenses. Major medical insurance will continue to be unacceptable to union leaders. It will remain beyond the financial resources of most low-income individuals, because of its "deductible" and "coinsurance" features. Although the experience to date with these newer plans generally has been favorable, they may result in an inflationary effect on medical care costs. This might eventually make their premiums unacceptable to even those in the higher income bracket.

Blue Cross and Blue Shield plans will continue to play an important role in the financing of medical care for many years to come. Blue Cross agencies will have to establish a strong national organization and its leaders will have to agree on a truly national contract. The "Blues," with their service contract, have an inherent actuarial advantage over the commercial insurance carriers (in most cases, the nonprofit plans reimburse the physician on a fee-for-service basis and the hospitals at rates agreed upon by the hospital and the Blue Cross agency; the commercial insurance companies pay many times the physician's fee in total and the hospital's published rates). One subscription rate for all those in the community, a national contract, and extended benefits appear to be the only hope for the "Blues," if they are to continue to succeed in the future.

Labor officials will continue to demand comprehensive medical care coverage for their members, the entire expense to be borne by the employer. If the "Blue" plans cannot offer a service contract with comprehensive coverage at a reasonable subscription rate, more unions might decide to build their own health centers and hospitals. Labor is going to continue to be a militant guardian over the quality and quantity of medical services available to its members. Union and organized medicine relations will have to improve in the next decade, if voluntary health insurance with free choice of physician is to succeed.

Unfortunately, the physician is "in the middle," between the patient who desires his service and the prepayment agency which reimburses him. The physician must be oriented to all the recent developments in prepayment and must show greater interest and understanding of these problems, if socialized medicine is to be averted. The county medical society grievance committee must adjust any member's fees that are unreasonable. As long as our economic position remains either constant or improves, compulsory national health insurance can be averted in the United States: a great deal of the responsibility is on the shoulders of the medical profession.

The local hospital administrator is, and probably will continue to be, a "doormat" for the patient, the physician, and the prepayment agency. On the one hand, the patient insists that the third party agency pays most of his medical care expenses; on the other hand, he demands the finest quality of care, the newest equipment, and the best of personal service. The medical staff, moreover, expects that the local hospital will expand its services to keep up with the latest advances in medicine. Cardiac surgery and the use of the artificial kidney, for example,

are extremely expensive and most of the initial expense has to be borne by the hospital. Thus, the hospital administrator faces increased costs with patients and physicians desiring better and more services, while in turn, prepayment agencies are concerned about asking for higher subscription rates.

Have the "Blues" been misnamed as the "Physicians' " and "Hospitals' Plan?" Although prepayment plans have played an important role in financing medical care, in some areas there has been a lack of liaison between organized medicine, the hospitals, and the Blue Cross-Blue Shield plans. As McNerney[27] recently stated: "There are the Blue Cross problems of (1) how close to get to the employer (who wants tailored packages and can get them from commercial insurance companies); (2) how close to get to the unions who have given up, temporarily at least, on government and want closer ties with Blue Cross, convinced that the purchaser and purveyor of service must be tightly organized; (3) how close to get to medical societies, highly sensitive to the corporate practice of medicine; (4) how close to get to that abstraction without reference to 'public' which exists as a shadowy force in the background and often makes itself felt through government in the form of care for veterans, indigents, etc.; and (5) how to balance all of the above against the hospital relationship. Quite a task. A task requiring such diplomacy at best and duplicity at worst that one wonders how long the situation of ambivalence can persist."

There is little hope that the present costs of medical care will decrease. Where to obtain sufficient financial resources to meet these expenses and the method of disbursement of these funds will continue to be one of the most difficult problems to solve.

The experience of the United Mine Workers will be a valuable guide for the future. As labor becomes a stronger force in the United States, relations between organized labor and the medical profession need to become more harmonious. Unless the purveyers and financers of medical care can extend comprehensive services at a reasonable cost, the future looks rather dim for those of us who cherish voluntary health insurance.

Some legislation will be passed within the next few years to help our aged to finance their own medical care. The present approach should be to increase old age, survivors and disability benefits, and to start a vigorous campaign for basic Blue Cross-Blue Shield type plans and "catastrophic" coverage, paid - up at the age sixty-five.

Extending prepaid medical care coverage for mental illness in the general hospital is a matter of determining the actuarial risk and additional premium; finding a method for the prepayment of mental illness outside the hospital is in the hands of the psychiatrists. After Great Britain's experience with drugs under the National Health Service, continued coverage for pharmaceuticals purchased at the retail pharmacy would appear to be somewhat discouraging; however, the physician and the pharmacist should be able to control the utilization of these benefits and make such coverage workable. As the hospital becomes more and more the health center of the community, care provided by visiting nursing agencies, convalescent centers and nursing homes will become more closely allied with the operations of the hospital and, in turn, these services may become part of prepaid medical care coverage.

It will not be an easy task to reconcile the diverse points of view of the medical profession, hospital directors, experts in medical care administration, executive directors and vice presidents of Blue Cross and Blue Shield plans, commercial insurance officials, leaders of labor unions, and employers.

One must be optimistic that enlightened leadership of organized medicine can meet these problems, as it has met others in the past, and that physicians will continue to provide the best of medical care for all the inhabitants of the United States.

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John G. Steinle and Associates
53 Hilton Avenue

PERK LEE DAVIS, M.D., F.A.C.P.
MARGARET H. SHUMWAY, M.D.
DOROTHY BLOOM

Paoli, Pennsylvania

Chronic Purulent Bronchitis

A report of a case of fifteen years' duration due to parasitic pulmonary infection.

The patient with a chronic productive cough is familiar to many physicians. But chronic productive bronchitis should not be considered as a diagnostic waste basket. Chronic bronchial disease is the most common single cause of chronic ventilatory insufficiency. The accompanying list suggests a few of the many causes, namely:

A. Pulmonary

- Bronchial (stenosis, foreign body, asthma)
- Bronchiolar (tuberculosis, bronchiectasis, asthma)
- Alveolar (radiation fibrosis, pneumoconiosis, bronchopneumonia, Hamman - Rich syndrome)
- Vascular (embolism, metastatic carcinomas, sarcoma, emphysema, collagenous disease)

B. Extrapulmonary

- Neurophychiatric depression
- Thoracic-spondylitis, kyphosis, Trichterbrust
- Pleural-fibrothorax

The patient having chronic bronchitis to be reported is interesting because of the long duration of branchiectatic-like expectoration for over fifteen years, and the rapid return to full health, well being, and the complete cessation of symptoms following treatment.

D.G., white female, aged forty-eight years, had been treated once weekly for fifteen years by a local physician because of a progressively intractible cough. The expectoration became more and more abundant, the cough more and more annoyingly intense so that daily activities and nightly rest became so markedly curtailed that she sought consultation. The patient was haggard and exhausted. The history disclosed that the family slaughtered their own steers, pigs, and poultry. She helped to make the family sausage, meats, and scrapple. Before the prepared meats were cooked she took part in the tasting consultation concerning the need for more seasoning or the addition of some bouquet. She had also been cleaning out chicken houses since she was eight years of age.

The physical examination showed her height to be sixty-five inches, her weight one hundred

From the section on Medicine and Laboratory Division of the Davis Medical Center.

Dorothy Bloom is staff assistant at Davis Medical Center.

and ten pounds. Her face had a puffy appearance and a suffused dusky hue. The examination of the chest revealed markedly diffuse coarse rales over the entire lung fields, particularly in the lower lobes. Expectoration during the examination consisted of a thick yellowish sputum of about five cubic centimeters which on postural drainage increased to eight cubic centimeters. She informed me that this expectoration had increased in the morning to around two ounces. This had caused her to consult us.

It seemed to us, that fifteen years was a long time for a person to awaken to the realization that there had been no improvement. The abdomen was mildly tender throughout. Proctoscopic examination revealed diffuse congestion of the mucosa without ulceration, but mild trauma caused some bleeding. Specimens of fresh feces were examined, as was also the sputum which she expectorated in the office. Chest x-rays revealed numerous half millimeter sized calcifications in the upper lobe, with considerable peribronchial fibrosis most marked in the bases.

The urine was negative, Rbc. 5,990,000; Hgb 16.9 Gms.; Wbc. 11,800; Baso. 18%; Eos. 18%; Pmn. 62%; Lymph. 19%; the sputum and feces were loaded with the eggs of Taenia solium and Taenia saginata. Three doses of Olioresin aspidium 1.5 Gms. were given in the usual manner. It was necessary to repeat the dose in fourteen days. Her husband and son needed the same treatment. Histoplasmine skin test was positive 4+, tuberculin first and second strength were negative. There was fifty percent relief of cough in four days and complete cessation in three weeks.

Summary

A case of severe chronic productive bronchitis due to pulmonary infection with pork and beef tape worm eggs is reported.

Complete cure was effected by thoroughly eliminating the parasite from the bowel.

Davis Medical Center



WANT A CHUCKLE?
SEE "OFF THE RECORD . . ."

Share a light moment or two with readers who have contributed stories of humorous or unusual happenings in their practice. Pages 25a and 29a.

MEDICAL CONFERENCE

First Case:

Malignant Hypertension

Second Case:

Acute Pancreatitis

DR. PERRIN H. LONG (CHAIRMAN): The first patient will be presented by Dr. Enson.

FIRST CASE
Malignant Hypertension
Presented by Dr. Y. Enson

DR. ENSON: Mr. R.H. was a 46-year-old Negro male. He was admitted to this hospital for the first time in August 1957 because he attempted suicide while he was in another hospital in the Borough of Brooklyn. He was in his usual state of health until January of 1957, at which time he had a fairly severe episode of epistaxis, saw a physician, and was told he had high blood pressure. He next came for medical care July 1957 when he was admitted to another hospital, where a diagnosis of bilateral bronchial pneumonia was made. He was treated with and responded to salt restriction and Digitoxin.® His blood pressure at that time was 240 over 130. On August 2, 1957, he became agitated, confused, attempted to commit suicide, and was transferred to the Kings County Hospital Center.

Here he was treated by the administration of sedatives, and within the next few days appeared to be fairly well, and on August eighth was transferred to our Service.

His past history and family history were not contributory to the present illness except that he told us he had had some progressive diminution of vision and that after three or four months, it was almost impossible for him to read the newspaper.

The patient was thin, poorly nourished, and quite lethargic. His blood pressure was in a range of 260/180, pulse was regular and 100 beats per minute, he was afebrile, and did not have dyspnea. Physical findings of bilateral retinopathy, a macular scar in right eye, a heart which was enlarged with a PMI in the anterior axillary line, were noted. There was a precordial systolic murmur with a booming second aortic sound. A presystolic gallop was heard along left sternal border. There was no heptomegaly. There was a 2-plus pitting edema

in both pretibial areas. Papilloedema, hemorrhages, and old exudates were seen in both fundi.

Admission laboratory studies showed that the urine specific gravity on random specimens rose to 1.018; there was no albumin, and as a matter of observation there never was albumin during the whole course of hospitalization, and there were only occasional white cells in specimens of the sediment. Hemoglobin was 9½ grams, the white blood cell count was normal, sedimentation rate 18 mm. in an hour, and the hematocrit was 27. The stained blood smear showed a moderate amount of hypochromia. His serological test for syphilis was negative, and the determinations of potassium, sodium and chlorides were within normal limits. His urea nitrogen was 66, CO_2 14 milliequivalents, calcium 8.9, phosphorus 3.2, total protein 4.7 with A/G ratio of 2.5/2.2. Left axis deviation was noted in his electrocardiogram and P A film of his chest showed a hypertensive configuration with a large heart and some bilateral congestive changes.

On the first day in the hospital the patient was placed in a tilt-up bed. He was put on salt free diet, Digoxin® was administered, and during the first twenty-four hours he received intramuscularly 2.5 mgms. of reserpine every eight hours. No effect at all was noted during this period on his blood pressure. The following day he was started on 0.25 mgms. of Serpasil® three times daily, and 50 mgms. of Apresoline® four times a day. On the third day the patient was on our Service, Inversine® was given. This was increased gradually to 60 mgms. a day in four divided doses by the fifteenth of the month, and at that time there was no effect at all in his blood pressure which continued to run at levels of 240/160 sitting or standing. On the fifteenth day of the month he was given a total of 150 mgms. of Bistrium® intravenously over a forty-five-minute period and again no changes were noted in his blood pressure. On the seventeenth the Apresoline was stopped. Inversine was gradually increased, and by the twenty-sixth of the month the dose of this drug had been increased to 80 mgms. a day. His blood pressure began to fall at that point, and between the twenty-sixth and the thirtieth of the month his blood pressure was fairly constantly at levels of 140 to 170 systolic, over 90 to 110 diastolic. By the thirtieth his recumbent blood pressure was consistently 150/100 and erect position was about 140/100. That day and for the next few days Inversine was lowered to 75 mgms. in divided doses, and we noted in re-evaluating the patient that by that time he had lost the papilloedema, that there were no fresh hemorrhages, just some old exudates, in the eyegrounds. He was able to read fine print in newspapers with ease. There was no change in the heart size. By the third of September, however, after the dose of Inversine had been lowered, his blood pressure returned to former levels and although we increased Inversine steadily to maximum dose of 145 mgms. a day by September 19, there was no drop in his blood pressure. On the twenty-first of the month Apresoline was again added, first at levels of 100 mgms. a day in divided doses and increased to levels of 200 mgms. a day.

We had noted, back on September 15, that the patient seemed to be nervous and tremulous and a bit weaker than he had been previously. This tremulous state increased in intensity and his condition deteriorated steadily until September 26, when he suddenly expired.

His urea nitrogen which had been 66 on admission on serial determination steadily dropped until it was 29 before his demise.

DR. LONG: Thank you very much, Dr. Enson. Dr. Meilman, will you continue, please?

DR. MEILMAN*: About twenty years ago, when I was taking the course in pharmacology, we were told that we could practice medicine all our lives if we knew how to use about thirty different drugs. Actually, of those thirty drugs, you could have discarded about half, because only fifteen of them really worked. There was

* Dr. Meilman is Associate Professor of Medicine at the Downstate Medical Center, State University of New York, the Director of Medicine at Long Island Jewish Hospital and Visiting Physician at Kings County Hospital Center.

good reason, therefore, for the period of therapeutic nihilism. Now the situation has changed. There are many drugs, all of which are very potent, very effective, and many are very toxic so that we have to consider whether patients should be exposed to them. Patients have long since lost the dignity of dying at home in bed, and now it has become a question of whether they are in addition going to lose the dignity of dying of a disease, and die of the treatment instead.

I think we can make a good case of the thesis that this patient may have died of the treatment. None the less, he had a very serious disease. He had a disease which is more fatal than cancer. If we compare a group of people with cancer of the breast and a group of malignant hypertension, the outlook is better for those who have cancer. Besides having a *bad disease,* accelerated hypertension, he was a Negro, which puts him in a poorer prognostic group. He was a young male, which makes it still worse. His initial symptoms are not unusual in malignant hypertension. He was admitted and then tried to commit suicide. This kind of abnormal behavior is not uncommon in malignant hypertension. I remember seeing one woman who was brought to the hospital because the family said she hadn't slept for a week, just walked about agitatedly for the whole week. The house officer felt that this patient was a psychiatric case, and that she should be sent elsewhere, but was wise enough to look at her eyegrounds before refusing her admission. She had grave changes in her eyegrounds as did this patient. So that mania, agitated behavior, and/or suicide attempts may be symptoms of this disease.

In July of this same year, just a few months ago, when this patient was treated for pneumonia and heart failure, we may be quite certain that he already had entered the malignant stage of hypertension, and I would believe that at that time he showed eyeground changes with papilloedema. For successful treatment of this disease vigorous therapy is necessary. The patient can't be given two weeks of treatment and then sent home. At about the same time, in June, I saw a patient whose history sounded very much like this one (except he was white), who had a little higher urea nitrogen on entry to hospital and who had the same kind of eyegrounds and visual trouble. He was hospitalized almost three months, but he walked out of the hospital with the same level of urea nitrogen as had this patient who expired on the twenty-seventh. The white patient's treatment was not interrupted at any time.

I want to emphasize the dangers of interruption of treatment. In treating a disease of this kind completely empirically, with no therapy directed at the primary and unknown cause, the moment the patient gets better treatment cannot be stopped. You can stop penicillin therapy when you have cured pneumonia, but that is a little different from stopping insulin in a patient who has diabetes. So with this disease; since treatment is symptomatic, it must be continued. In particular, there is a good deal of experience to indicate that when we achieve a good effect in a patient with a ganglion-blocking drug, and the treatment is stopped, following a reinstitution of therapy the patient may not react favorably to the former dose of the drug and perhaps not to much larger doses, as was the case here. The initial treatment in this patient was good. His vision improved, and his papilloedema cleared. This never happens spontaneously in these patients. It happens with a variety of therapies, but in this patient it happened because of the therapy.

I might comment on the fact that albumin was absent from the urine of our patient, yet he had an elevated blood-urea-nitrogen. A patient with malignant hypertension may show no albumin and even occasionally a normal specific gravity of the urine so that one is misled into believing that kidney function is fairly good. Actually these patients are on the border line, and may go quickly, in a matter of a few days, into a state of nitrogen retention and albuminuria.

I wish to return to diminution in dose of Inversine. This process of lowering the dose whenever the patient improves, reminds me of what may happen to patients having pemphigus

who do very well with steroids. The physician is so pleased that he immediately reduces the dose of steroid and the patient relapses. Here again we have a disease in which we have not gotten at the primary cause at all, and which we are treating symptomatically. Thus if we are lucky enough to get a good response in a patient, to get a good postural effect in blood pressure, with a combination of drugs and without too much trouble, the medication should not be stopped unless side effects from the drug appear. In a few patients, over a period of time, the pressure becomes lower and lower; instead of 140/100, it goes to 130, 120, and the patient experiences fainting; then one must certainly diminish the dose of medication. But the drug is not stopped, and it is lowered only to maintain the effect. There have been a few isolated instances (I've had one) which fit into a special category. I know one patient in whom, over a period of time, the medication was reduced in a very gradual fashion, but only because the pressure was going too low.

Now, I would like to spend the last few minutes in talking about the people we may injure, at times fatally, with medication, and whether they outnumber the ones we are going to help. There is no question but that in the malignant phase of hypertension, a disease with a case-fatality rate of over ninety percent in two years, heroic measures, measures which may have great danger attached to them, may well be indicated.

I've seen a number of instances of severe mental depression due to Reserpine. I understand that there have been suicides accompanying its use, although they haven't been reported in any numbers. Certainly if you see a patient who is severely agitated and depressed from Reserpine, it is obvious that this patient might attempt suicide. Yet this is a drug which we think is very simple to use, a "nice tranquilizing drug." Unfortunately patients sometimes become so tranquil that they feel like killing themselves. If this should happen, particularly in a patient who did have a disease with a bad prognosis, the treatment has been more dangerous than the illness.

With Apresoline, despite the fact that it produces some very unusual remarkable side effects, not only rashes, nausea and vomiting, but a very specialized disease involving serious surfaces, joints, pleura, pericardium, liver, nephritis, anemia, fever, and finally lupus-like syndrome, even in this latter group I know of no recorded cases of death from the drug. All recorded patients had remission when the drug was stopped. In some patients steroids also were given. There was a mention of one fatal case in one of the closed television telecasts, which I tried unsuccessfully to trace down by mail.

Apresoline, when it causes death, is much more subtle. It does so by increasing cardiac output in the patient with coronary arterial disease. Just as it wouldn't be desirable to give thyroid, for example, it wouldn't be advisable to do anything involving cardiac output. Such a patient may get a "coronary" and it might be attributed to the drug. But it might not have happened if he hadn't received the drug. Certainly a patient with coronary disease or congestive failure should receive Apresoline sparingly, if at all, and only when some other drug has already been given to diminish the work of the heart.

The ganglion-blocking drugs can cause death in two ways. They can cause death because they have produced a too excessive ganglion-block. In other words, if a ganglion blockade is produced, it is not a side effect of the drug. It is the desired effect. If a patient dies of a block of his ganglia it doesn't mean that the drug has undesirable side effects, it means that the dose was excessive. For example, consider norepinephrine. If infused too rapidly, the blood pressure may go up to three hundred systolic and the patient may rupture a vessel. One cannot say that this is a side effect of norepinephrine; it merely represents excessive dosage. If the patient has a slough on his foot following the administration of norepinephrine and gets gangrene, that may be a side effect. The ganglion-blocking drugs can cause death by giving excessive amounts. Ganglionic blockade with a marked fall in blood pressure, say

to sixty or to zero, obviously causes myocardial infarction, strokes, and death. Large doses may block the parasympathetic supply to the intestines, and intestinal obstruction develops, or even a total ileus, and the patient may die or that if it is not recognized and treated. These are deaths from too much drug.

Apparently some of these can produce deaths not necessarily from too much drug. For example, hexamathonium produced a bizarre disease which apparently is specific for that drug. This is an interstitial pneumonia which occurs only in patients who are in the accelerated form of hypertension and who receive large amounts of the drug. Most of them have nitrogen retention, and perhaps they can't excrete the drug properly. This interstitial pneumonia is invariably fatal. Only six patients of this type have been reported. It hasn't occurred with Ansolysen® and it hasn't yet been described following Ecolid® or Inversine.

A peculiar group of neurological manifestations has been described with Inversine and even though it blocks the ganglion it isn't a quaternary ammonium compound. All the other drugs of this type are quarternary ammonium compounds, and it is easy to imagine how they could get in and "block" acetylcholine. Inversine is a secondary amine with a totally different structure, yet it produces the same effects. The neurological manifestations which may result from its use are primarily tremors and hallucinations. I have had previous experience with two patients, one showing each side effect. The patient who had hallucinations was in the malignant phase, with nitrogen retention, secondary to chronic nephritis. In her case we withdrew the Demerol® she was also getting, and the hallucinations stopped. The Inversine was continued. We had one child who developed tremors while taking Inversine and there again, because the outlook was so poor, we kept administering the drug, and the tremors stopped. The patient presented today developed tremors and gave us a couple of days' warning. The tremors were mild at first and then became almost flapping. The patient stated he couldn't feed himself. This has been described as occurring with Inversine, and in instances where the drug has been stopped, the tremor has stopped, and in the one instance when the drug was given again the tremor did not appear.

All of these patients had nitrogen retention, were in the malignant phase of the disease, and had other evidence of cerebral-vascular disturbance. I think we made a wrong guess in this patient. Perhaps, we said, this is the Parkinson-like tremor which one sometimes sees with Reserpine. Therefore we omitted Reserpine first. A few days later, without much warning, he died while talking to his wife. Now, I don't mean to imply any etiological relationship, but there were no preliminary warnings; he didn't have pulmonary edema, he didn't complain of sudden headache, or act as though he had an arrhythmia. His wife called the house officer, and the patient was dead. I think we have to attribute this death to the medication the patient was receiving, and in reconstructing the situation examine where we might have altered it. At the smaller dose level which was effective it controlled the blood pressure, and there was a progressive amelioration of the patient's symptoms. I think the first error was in reducing or omitting the drug. The second error was in not recognizing that this toxic symptom might have been ameliorated by stopping Inversine, if we had stopped it in time, particularly since Inversine wasn't lowering his blood pressure. Perhaps at that time if we had stopped the drug we might have had a chance to lower the blood pressure with some other agent.

DR. LONG: Thank you very much, Dr. Meilman. In looking over this record, it is interesting, as Dr. Meilman pointed out, to see that this patient died and there is no good explanation for his death; and the gross findings at post-mortem showed moderate pulmonary edema that doesn't mean anything, myocardial hypertrophy and dilation, and essentially nothing else. The pathological changes should not have produced death suddenly. Inversine may well have been the cause. Time makes us go on to the discussion of our next patient,

who is Mrs. L.P. from Ward C-32. Her case will be presented by Dr. Antiles.

SECOND CASE
Acute Pancreatitis
Presented by Dr. J. Antiles

DR. ANTILES: This is the first admission to the Kings County Hospital of Mrs. L.P., a 34-year-old Negro female factory worker, who entered the hospital on the eighteenth of August, complaining of pain in the mid-epigastrium of about two days' duration. The patient was entirely in good health until two days prior to admission, when she was awakened from her sleep by an aching epigastric pain radiating straight through the back, and associated with some nausea and vomiting. The pain persisted, as did the vomiting, for the next two days. Both were unrelieved by medication received at two local hospitals. The symptoms were not related to the intake of food or to respiration, but were somewhat alleviated when the patient assumed a sitting position. The patient denied hematemesis, malena, light-colored stools, fatty- or fried-food intolerance, jaundice, fever, chills, or chronic anemia; however, she did state that her urine had been darker during the two days prior to admission.

Past History. The patient was para 4, gravida 4 and had experienced no difficulty during any of her pregnancies. The family history and review of systems were unimportant. The patient does not drink or smoke, and her dietary habits were good.

The physical examination showed that she was a well developed, well nourished Negro female who was in moderate distress and who was complaining of upper abdominal pain. Blood pressure was 125/75. Temperature 101.4. Respirations 20. Pulse 92. The positive findings were confined to the abdomen, which was scaphoid in outline and soft. There was no spasm or rebound tenderness. However, there was direct tenderness noted over the epigastric area and in the right upper quadrant. There were no viscera or masses palpated and the bowel sounds were normal. Brown stool was found on examination of the rectum. The sclerae were moderately icteric.

Laboratory Tests. The hemoglobin was 14.5 grams. The white count was 10,000 with a shift to the left. Bile in the urine was three plus. The urine urinobilinogen was negative. The amylase estimated in blood drawn on admission and before the administration of any narcotic agents was 2,436 units. On the following day, August 19, the STS was negative. The BUN was 17. The phosphatase was 7.6. The serum-proteins were depressed to 4.9 with an albumin-globulin ratio of 2.4 to 2.5. The bilirubin was 6. The cholesterol was 166. The amylase on the second day was 1416 units. The CO_2 was 17.9. On the twentieth, the blood calcium and phosphorus were within normal range. The amylase had come down to 110. On the twenty-first of August, the phosphatase was 6.2, the bilirubin was 1.7, and the amylase was 42. On the following day the amylase was 100. The x-rays will be reviewed by the roentgenologist.

Therapy consisted on admission of 75 mg. of Demerol after blood for the amylase was drawn. Further therapy consisted of sedation, analgesics, and penicillin and streptomycin. Initially atropine which was later switched to Probanthine® was given, and the patient was kept on nothing by mouth for two days, and fluids and vitamins were administered intravenously.

Her course was one of progressive improvement. There was no pain after twenty-four hours. She was afebrile at thirty-six hours, and she was ambulatory and eating well after forty-eight hours.

DR. LONG: Thank you, Dr. Antiles.

THE ROENTGENOLOGIST: This is a plain film of the abdomen which was taken on August 19, and it shows the normal distribution of gas in the large bowel and possibly one loop of small bowl with a gas collection in it. There is no evidence of any calculi within that abdominal cavity. It represents possibly a minimal reflex pattern. On the twenty-third, the patient had an upper gastrointestinal series followed by a cholecystogram. The upper gastrointestinal series showed no evidence of any ab-

normality. The gallbladder was well demonstrated. Multiple small radiolucent stones were noted at the fundus of the gallbladder. That is the complete study in x-ray.

DR. LONG: Dr. Hirshleifer, will you please discuss the patient's course?

DR. HIRSHLEIFER*: Acute pancreatitis is a very common disorder. It is best defined by Richman as an acute response of the pancreas to stress. The clinical picture varies with the extent of the reaction, the degree of impairment of the gland, and the affected adjacent structures. Historically, acute pancreatitis has been noted at the autopsy table for almost 150 years. As far back as 1850, Claude Bernard was producing acute pancreatitis experimentally in animals. The classical American paper was presented by Reginald Fitz, Senior, in 1889, in which he reviewed the records of seventy patients who had had acute pancreatitis. He concluded that conservative treatment was the order of the day and that operative intervention should be reserved for only those patients who had surgical complications. Over the years following this presentation, we have gone through many eras in which surgical intervention was rife, thereby producing a greatly raised case-fatality rate in this disease.

Four forms of acute pancreatitis may be recognized. The edematous form, the hemorrhagic form, necrotic form, and suppurative form. All these are gradations of acute pancreatitis. To speak of causes of pancreatitis is a bit ephemeral. At times it may be better to speak of associated disorders in pancreatitis. Acute pancreatitis is usually associated with gallbladder disease, or alcoholism. It may follow trauma or accompany infectious diseases. It may follow gastrectomy, or various types of surgery on the biliary tract. It may be allergic in nature, and at times it is seen as a complication of mumps. The two main associations are with gallbladder disease and with alcoholism. At times pancreatitis has been found caused by tumor of the pancreas, by fibrosis, or as a result of an epithelial metaplasia of the pancreatic ducts.

Taten and Howard reviewed one hundred instances of acute pancreatitis in patients who survived, and followed these patients for a period of three and one-half years. They found approximately forty-three percent had associated gallbladder disease, and that about thirty-nine percent were associated with alcoholism. The recurrence rate in these patients was about forty percent over a period of three and one-half years. Those cases associated with gallbladder disease which had corrective biliary surgery performed, did not have any recurrences, except one instance which was associated with alcoholism. The rate of recurrence in those patients who were alcoholics and who had biliary surgery performed was about thirty-three percent.

The patient whom we are discussing very well illustrates the gradations in severity of the clinical picture which one can see in acute pancreatitis. It may vary from a very mild digestive upset to the acute fulminating form, going on to death within a short time.

I don't think that many of us will condemn the first two physicians who saw this patient. After all, a patient complaining of abdominal pain, whose abdomen is soft, who has some vomiting, who has no objective signs, only symptoms of nausea, epigastric pain and vomiting—in such an instance, I think the majority of us would overlook the diagnosis. But in further study of this patient, we find that this woman did have epigastric pain which radiated to her back. Her pain was relieved when she sat up, or was in a bent position, which is fairly typical of acute pancreatitis. The house officer who admitted her to Kings County Hospital was alert in taking note of this at the time the patient was admitted. Almost all these patients have pain. The vomiting is usually of an unremitting nature. Many of them have some degree of adynamic ileus. The roentgenologic studies indicate that a certain degree of ileus was present. About twenty-five percent of these patients have icterus, as this patient did. Leukocytosis is present in almost all of

* Dr. Hirshleifer is a Visiting Physician at the Kings County Hospital Center.

these patients, and it usually varies from 10,000 to 30,000 W.B.C. There is usually a shift to the left as was noted in this patient. The degree of lymphopenia usually is a factor in the prognosis for the patient. The more severe the lymphopenia, the more grave is the prognosis. In the very severely ill patients an elevated BUN is a very grave sign. The amylase does not always have a typical curve. It may be high on the second day, and not on the third. It may be high, as in this patient, on the third and fourth day and go down after that. To diagnose properly those patients in whom the disease is suspected, the serum amylase should be repeated frequently.

Determinations of serum lipase, which are not performed too frequently in most hospitals, may help at times, because abnormal levels of lipase may be found after the serum amylase has returned to normal. Recently, some clinicians have been estimating the urinary amylase. The urinary amylase will remain high after the serum amylase returns to normal. Glycosuria is usually present in about ten percent of these patients. It is stated that if blood sugars are done, hyperglycemia will be found more frequently. Well, that may be due to blocking of the biliary tree, but the serum alkaline-phosphatase can become elevated when the pancreatic duct is blocked. Albuminuria is present in about twenty-five percent of patients having acute pancreatitis. Peritoneal diagnostic taps have been performed on these patients. In a certain percentage fluid is withdrawn. It may be hemorrhagic, which is fairly diagnostic in a very severely ill patient, or it may be tested for its amylase content, which is very high in these patients. A secretin test for pancreatic function, performed after the acute phase passes over, may also help in making a diagnosis in retrospect. Electrolyte disturbances are not too infrequent in these patients. Usually they come about from over-treatment or not well balanced therapy. In the treatment of these patients we try to put the pancreas at rest to a certain degree by inserting a continuous nasal gastric suction tube. Fluids and salt must be watched carefully to prevent hyperchloremia from occurring. Hypocalcemia does occur in certain of these patients since fat necrosis may occur and calcium tends to go to the area of fat necrosis in order that the calcium may combine to saponify the fatty acids in these areas as calcium salts. Though tetany in certain of these patients has been observed without any lowering of the blood calcium, this is brought about by the rise of certain fatty acids which pull ionizable calcium out of the blood stream. In these instances calcium medication may not be of assistance, and parathyroid hormone should be given to treat the tetany. The electrocardiographic findings in these patients vary tremendously. There is nothing typical about them at all. They usually reflect the changes in the electrolyte balance in the body. Goldman has described what he thinks is a specific radiographic finding. He states that he sees a vague outline, an opaque outline, between the stomach above when it is filled with air, and the transverse colon below, and on that basis he has attempted to make the diagnosis of acute pancreatitis. In the sequela to acute pancreatitis most of the pseudocysts and calcifications seem to follow those patients who suffer from alcoholism rather than those patients who have an associated gallbladder disease.

The differential diagnosis in these patients may be quite difficult at times. They may come in with the signs of acute surgical abdomens. This patient did not have such signs. It was a fairly classical, mild instance of acute pancreatitis. At times when a common duct stone is present, the serum amylase may be raised in about twenty percent of the patients, but rarely to the level to which it was raised in this patient. The only way to differentiate our diagnosis in such a situation is to observe the patient, and wait and see how the disease develops. Of course, at times we may have both diseases. Acute cholecystitis usually produces right-sided pain. Perforated peptic ulcers are differentiated by x-ray and the finding of gas under the diaphragm. A retrocecal appendicitis lying on the psoas muscle may simulate the picture of acute pancreatitis at times, but there is rarely any rise in the level of the serum

amylase. Acute intestinal obstruction at times is accompanied by a rise in the level of serum amylase. But in such an instance usually active peristaltic movements are found rather than adynamic ileus. Mesenteric thrombosis may be a difficult diagnosis to differentiate at times. Here one looks for other signs of vascular disease, the possibility of some melena, and a rise in the level of serum amylase is usually not present. The symptoms of a dissecting aortic aneurysm may simulate this acute pancreatitis. Then one looks for other signs of an aortic aneurysm such as absent femoral pulsations or reduced pressures in the lower extremities. A left-sided kidney stone may simulate the symptoms of acute pancreatitis. Here one examines the urine and looks for hematuria. Coronary thrombosis may occur with nausea, vomiting, and epigastric discomfort but the level of the amylase is rarely raised. The electrocardiogram does help in the differentiation of the condition, and transaminase studies also help in this differentiation. Acute porphyria is thought to simulate this condition at times. Here spectroscopic studies are necessary for diagnosis. That new entity that has been written about of late, periodic peritonitis, can be differentiated by serum-amylase studies.

Treatment of acute pancreatitis is mainly conservative except for the complications or for the prevention of recurrences. We attempt to put the pancreas at rest. We do this with nasal gastric suction and also the utilization of blocking agents to diminish the secretions of the pancreas. Probanthine was used in this patient. Other blocking agents have been recorded in the literature. Of late they have often used intravenous Diamox®, a carbonic anhydrase inhibitor, to diminish the pancreatic secretion.

Relief of pain may be a problem in these cases. Morphine is felt to be contraindicated. The reason for this is because of the reflex spasm which it causes in the biliary tree and pancreatic ducts. Demerol does this to a certain extent, too, but not quite to the same degree as morphine. Both these drugs may on their own raise the level of the serum amylase. Catell, in Boston, has relieved the pain in certain of these patients in whom it was severe and difficult to control by an intermittent epidural block, utilizing procaine. He describes his results as being fairly good. It is important to maintain the electrolyte and fluid balances in these patients. Infection should be prevented by the use of antibiotics. In this patient we used a combination of streptomycin and penicillin. There are many people who believe that the results are better by inserting the broad spectrum antibiotics directly into the nasal gastric tube for direct action upon the intestines. The use of steroids is difficult to assess. There are so many gradations of severity of this disease from the very mild to the very fulminating type of case that steroids, at the present time, just can't be evaluated properly.

The surgical complications, as I stated before, should be taken care of in time. The main thing is to recognize the condition and treat it conservatively. The complications must be treated as they arise. If there is complicating gallbladder pathology, perform biliary tract surgery to prevent recurrence, but this should be done after the pancreas has been cleared.

NATIONAL ASSOCIATION FOR MENTAL HEALTH
Fight Mental Illness

Practitioners of Medicine and

BRUCE H. POLLOCK, A.B., M.D., M.P.H.
Huntington, West Virginia

Many of you who have not been actively engaged in public health, may have widely varying ideas as to its functions and may be inclined to believe that this arm of medicine is in favor of socialized medicine. The public health officer may even be looked down upon by his fellow physicians because he is in governmental medicine. However, if physicians knew the training requirements for public health, and understood the scope of its work, they would be more sympathetic toward its problems. In fact the public health officer works side by side with the local physician to keep the community in good health.

Most of the physicians engaged in public health are well trained. They have, in addition, to their degree in medicine and their internship, at least one added year of study in a recognized school of public health, for which a master's degree is given. Many of these physicians have practiced medicine for a time before becoming associated with public health organization and therefore are very well informed as to the problems which the practitioner of medicine faces today.

The public health physician must, because of his work, have a better knowledge of communicable diseases, engineering, and law, than his colleague, the practitioner of medicine, although he will probably not be as up-to-date on newer methods of treatment except for venereal diseases, tuberculosis, and ordinary communicable diseases. He may even be a little "rusty" in his acumen in diagnosis.

The public health physician must, at times, be at variance with his colleagues because he has no doctor-patient relationship, as he must consider the population under his supervision as a unit, and not as individual patients. This is something that the individual physician finds hard to understand. Many times the practicing physician resents the fact public health departments are engaged in mass inoculations for it appears to be taking money out of his pocket. Although this charge may be true, it is not because the health department wants to take the private physicians' prerogatives away. It is because this is the only method which can be employed and which has been demonstrated will protect the masses of people. Many of the policies of the health department are based on state laws, and whether the health officer agrees with them or not, he must carry out their provisions. New programs of health departments must be formulated as new problems arise, such as accident prevention, chronic illnesses, alcoholism, etc. Many of these take a great deal of money to finance, far beyond the scope

From the Cabell-Huntington Health Department.

Public Health



of the average physician. Since they are tax supported, the public certainly has a definite right to have a voice in supporting them even though individual physicians may object to the program.

When organized medicine understands the problems of the health officer and his department, it will understand that the health department is at no time desirous of practicing medichine, except as necessity dictates such a course there then will be a much more cordial relationship existing between organized medicine and the health officers.

Most physicians think that the only responsibilities of the health officer in any locality is such things as communicable disease control or checking a suspected well in a case of typhoid fever, etc., but this is only a minor point in a busy health department. The health officer's day and many nights are taken up by problems of the community. Failure by the health department to carry out its functions may increase the load from illness of the already overworked practitioner of medicine. Many hours of the health officer are devoted to city council or county court meetings. It is the health officer who must be both the defendant and the plaintiff in many court cases. Organizations often ask him to speak or to help them formulate programs. He also serves on many organization board committees. His day may be largely taken up by individual conferences with dairymen, bakery men, foodhandlers, or meat packers on various health subjects. Because of the necessity of controlling insects and rodents, he must have a knowledge of pesticides and rodenticides and how they may be used. He also must be familiar with their possible toxic

effects and the antidotes for them.

The sanitarians are responsible for the inspection of restaurants. Every part must be completely covered, such as dining room, cupboards, restrooms, walls, ceiling, floors; especially the kitchen including temperature of water in the dishwasher, or how the dishes are cleansed . . . by chlorine, iodides, including soap and/or other detergents; the rim counts of glasses, cups, forks and spoons. They must inspect grocery stores for cleanliness. Are the meat slicers, hamburg grinders, etc. clean? Does the store have a two-compartment sink to clean their equipment and handwashing facilities in addition? Is there a toilet in the store? Are all perishable goods under proper refrigeration and no cream puffs or custards out on the counters? Is the building free of rats and mice, so that there will be no danger of rat urine and feces contaminating food with possible organisms of leptospirosis?

The sanitarians will make similar inspections on processing plants, candy manufacturing, and packaged foods manufacturers, bakeries and bottling plants. Slaughter houses must not only be inspected for their sanitation, but also as to the value of the meat for human consumption. Is it free of tuberculosis, various worms, etc? Does it contain adulterants or unlawful preservatives? The sanitarian will collect samples for later laboratory analysis.

Swimming pools, both indoors and outdoors, in season must be inspected. Are the filters working properly? Is there sufficient chlorine present? Is the pH correct? (All water is tested for these on the spot.) Can you see the bottom of the pool at ten foot depth or is it too turbid?

At motels, recreation camps and parks, he must make sure that there are sufficient toilets and that they are properly constructed, that the water supply is safeguarded, and that the area is clean. All must be in a proper sanitary condition. A sanitarian inspects the hot lunch programs in the local schools and enforces the same careful sanitary requirements to insure the safety of the food to the school children.

Some must lay out and inspect septic tanks as to capacity, percolation test of the soil, the amount in feet of field tile, because of the number of bedrooms, absorbability of the soil, automatic dishwasher or washer, etc. may make the problem of each tank different. Other sanitarians inspect or advise on subdivision sewage treatment plants and the proper disposal of garbage for individual homes. Is the garbage can of proper size according to city ordinance? Is it in good condition? It is the job of the sanitarian to inspect the municipal incinerator. Is it doing its intended job? In the inspection of a landfill, are the trenches deep enough? Is the garbage being compacted correctly and is it being covered to a sufficient depth to exclude human scavengers, flies, rodents and odors?

Sanitarians conduct foodhandler training conferences to educate foodhandlers in all categories, to ensure that food is handled in such a manner that there will be little danger from contamination, be it in a restaurant, school, hospital, or at a meat counter. There must be inspection of the sanitation and foodhandling in all hospitals, day care centers, homes for aged persons, and nursing homes. Likewise, all water supplies must be examined for safety and to see that wells and cisterns cannot become contaminated because of improper seals or wrong types of pumps. Checking for the proper amount of fluorides in the water is also necessary. Complaints must be investigated, whatever they may be, although many are fatuous, such as the woman who called and said she did not care if her neighbor had a dog, but she wanted the health department to do something about its big bowel movements. Some sanitarians must ascertain causes of accidents, investigate odors and gases, fallout, etc. from industrial plants and radiological hazards of water, fallout, air pollution and the control by appropriate sprays and poisons of vectors of disease and the eradication of breeding places of insects and rodents. Sanitarians are assigned to inspect, condemn, or order corrections to be made on buildings and houses that may be unfit for human habitation. Some sanitarians are assigned to go to farms to inspect the facilities of the producer of milk shipped into the community and inspect all creameries to see

that they are being run in a sanitary manner.

In the laboratory, the technician runs plate counts on milk samples to see if they are under the lawful limit for bacterial counts. The same is true for rim counts taken at restaurants of cups, glasses, spoons and forks. The technician checks the milk for butterfats, for solids not fat, and whether it has been properly pasteurized. The bacterial content of water samples from wells and cisterns is also checked. The technician also does blood counts, urinalyses, sedimentation rates, bacterial studies, etc. as required by various official agencies.

The adminstrative assistant adminsters the finances of the health department, keeps personnel records, salaries and performances. He purchases all supplies and makes requisition for payments, supervises building maintenance and cleaning.

The work of the clerks is very important. They must keep all the records which are so important to a health department, such as records on milk, water, immunizations, necessary reports to the State Health Department, registry of all the known tuberculous individuals in the community; they must call all physicians weekly to see if they have had any communicable diseases during the week (this should not be necessary, but physicians often are negligent about reporting unless they are reminded.) They keep records of all dairies as to bacterial count of the milk condition of the farm, Bang's testing and tuberculosis testing, records of restaurants and nuisance complaints, the results of the investigation by the sanitarian, and in most health departments of births and deaths.

The public health nurses have a heavy schedule. They conduct immunization clinics for typhoid, polio, or diphtheria, pertussis and tetanus at a school or in the health department clinics. Some of them work in the venereal disease or tuberculosis diagnostic clinics. Some nurses must make home visits on prenatal and postnatal cases, teaching classes for prenatal mothers, others must visit a patient suffering from a communicable disease to instruct the family about isolation and sterilizing dishes and clothing. While in the home, the nurse will also note its sanitary conditions. Is the well properly sealed to safeguard the water supply, if outside of a community water supply? What type of sewage disposal system is being used? She will note as to whether the children seem to be well fed and in good health. She will casually bring up the question of food and how it is prepared. In case there is evidence of a person needing some medical care, she will impress on the family that they should see their physician as soon as possible. If the family is destitute, she will inform the people about charity clinics and where one might get glasses, hearing aids, dental care, or the various services which the community offers. Sometimes the nurse will be asked to talk before a Parent-Teacher Association or some other group at night. She must keep herself up-to-date and be well informed on current medical thinking. Often physicians want the health nurse to demonstrate how to give injections such as insulin to a patient and to interpret the physician's instructions. She must be a good public relation person and a good educator.

As can be seen from the foregoing, the health officer is a specialist in the field of public health and since he is as well qualified to practice his specialty as other physicians are in theirs, he should have the same rights and privileges in the local medical societies to hold office as his colleagues.

There is no great difference in the thinking between the practitioner and the public health physician. Both strive for the same goal; namely, the welfare of the general public. Both try to prevent diseases. The health officer will often take more time to explain medicine or an illness to the patient than the ordinary physician because this is part of his training. The practitioner must, in addition, treat those who become ill or are injured. The health officer is first a physician, then a physician who has specialized in the branch of medicine called public health. He is interested in the health of the community whereas the private practicing physician is more interested in the health of individuals. The public health physician sees the

community problems and takes action to solve them. He is, because of his training, better able to cope with these problems. Perhaps he is somewhat more active in civic affairs, since he holds no office hours in the evenings and can devote more time to this type of service. He is constantly on the alert to improve the functions of the health department. He strives to keep in cordial relationship with his colleagues and is always ready to help them in any way consistent with good public health practice.

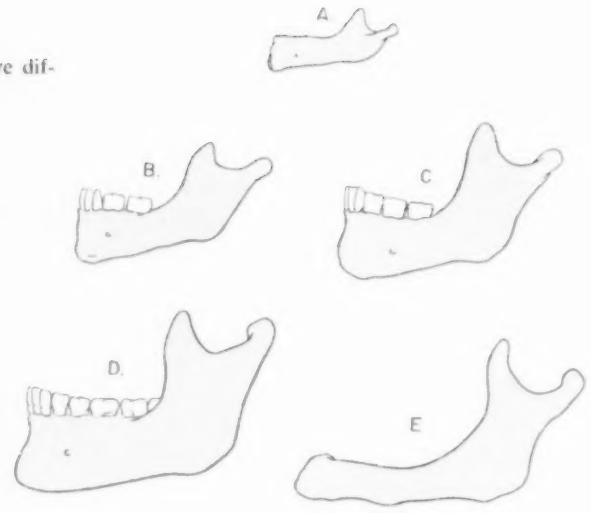
It is the health officer's belief that where the private practitioners understand public health problems, they will support his desire to render service to the community for he is only too willing to support organized medicine, and aid the physician as an individual in any manner possible.

1336 Sixteenth Street

CLINI-CLIPPING

A profile of the Mandible at five different periods during life—

A. Birth
B. Four Years
C. Eight Years
D. Adult
E. Old Age



Report of a case and
Review of the Literature

Paroxysmal Supraventricular Tachycardia in Infants

STANLEY H. STEINBERG, M.D.
Washington, D. C.

Paroxysmal tachycardia in infants, although not rare, is most spectacular and constitutes an acute pediatric emergency. It may be divided into two major groups, supraventricular and ventricular which are based upon the interpretation of the electrocardiogram. Paroxysmal supraventricular tachycardias will be restrictively classified to include only those of atrial, AV nodal and theoretically sinus origin. This leaves paroxysmal auricular flutter and paroxysmal auricular fibrillation in a separate and distinct classification as causes of tachycardia.

Case Report

W. C. H., an eight day old white male infant was admitted to Providence Hospital, Washington, D. C., on May 8, 1958.

History: This infant was born at another hospital in an uncomplicated low forceps delivery of a mother who had Mediterranean or Cooley's Anemia. Gestation was forty weeks. Physical examination of the baby at the age of four days revealed no abnormalities. The course in the hospital was uneventful, the infant being discharged at the age of five days. Approximately fourteen hours before admission the infant while crying loudly suddenly stopped and became pale. Listlessness, sluggishness, and feeble attempts at sucking followed. About three to four hours before hospitalization it was noted that the color was slightly bluish, the respirations were rapid and the skin became cold and clammy.

Physical Examination revealed a critically ill white male infant, cyanotic, cold and clammy with rapid respirations (60/min.) accompanied by a barely audible expiratory grunt. The heart rate was extremely rapid, estimated to by 320/min., and no murmurs were heard. The liver was palpable one finger below the costal margin. No peripheral edema, ascites or splenomegaly was noted. The infant was immediately placed in oxygen and an electrocardiogram was done. The electrocardiogram showed the presence of supraventricular tachycardia with both auricular and ventricular rates 280/min. Lanatoside C (Cedilanid®) 0.2 mgms. was immediately given intravenously. Within two hours the cardiac rate had dimin-

ished to a normal value. An electrocardiogram at this point showed both auricular and ventricular rates to be 140/min. Within four to six hours after reversion to normal rhythm, improvement was marked. Cyanosis had disappeared, respirations were normal in rate and depth and feedings were well taken. Oxygen was discontinued eighteen hours after admission.

Laboratory Work: Hemoglobin 17.5 grams, Hematocrit 51, Wbc 9,800, Segmented 68%, Bands 4%, Metamyelocytes 2%, Lymphocytes 24% and monocytes 2%. Urinalysis showed a trace of albumin and the presence of a few granular casts. Chest x-ray showed a convex widening of the right superior mediastinum consistent with persistent thymus.

Oral Digalen® (Roche) 0.5 cc was given by mouth twelve hours after the original lanatoide C and repeated again twelve hours later. Thereafter maintenance dosage of Digalen was given at the rate of 0.1 cc daily.

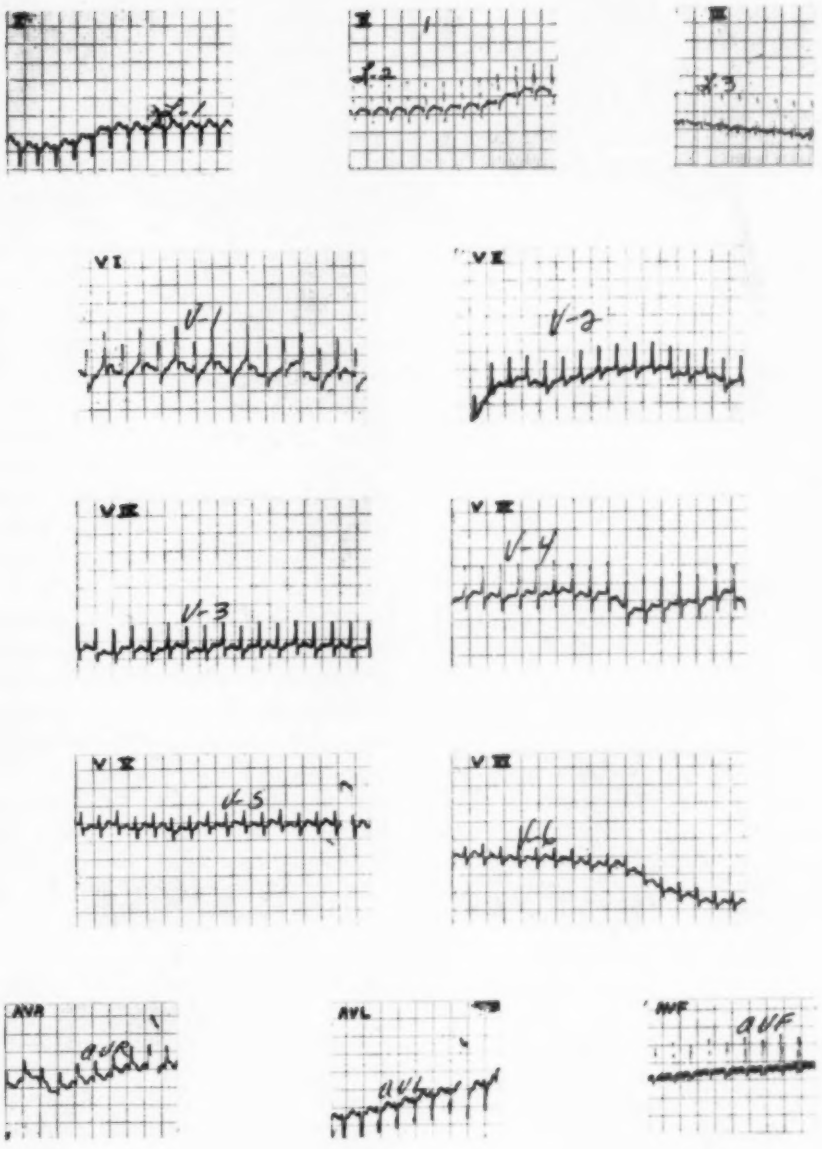
On the fourth hospital day shortly after a feeding the infant once again became moderately cyanotic. Both auricular and ventricular rates were 260/min. Lanatoside C, 0.1 mgm intravenously was given. During the administration of the lanatoside C the rhythm reverted to normal.

A systolic, grade i-ii murmur was heard in the interscapular area the day after admission and has persisted to the present time. The infant was discharged on the fifth hospital day and has since been re-examined showing no significant changes. The possibility of coexistent congenital heart disease is being considered. Digitalis maintenance therapy will be continued for two years.

Discussion

Paroxysmal tachycardia in infants as a clinical entity has been well established.[1, 2, 3] It differs markedly from its counterpart in older children and adults. In the majority of instances, infants in the first four months of life are affected. The cardiac rate usually varies between 250 and 300/min. As far as can be ascertained 360/min. is the highest reported rate associated with successful treatment.[4] One instance in which the cardiac rate was 365/min. terminated fatally;[5] this is the highest recorded rate in the literature. In infants, the onset of paroxysmal tachycardia may be rather insidious; it may be present without symptoms, being found only when a routine physical examination is done. It may or may not be associated with illness or congenital heart disease. In the majority of patients under the age of four months no evident cause could be ascertained.[2] However, in most instances, the onset is more rapid and is associated with early symptoms of restlessness, cyanosis, pallor and very frequently vomiting. The baby becomes dusky in color, limp and quiet. The respiratory rate becomes very rapid and feedings become difficult. The cardiac rate is so rapid that it is difficult to count and only an estimation can be made. The radial pulse either cannot be felt or cannot be reliably counted. The heart may or may not be enlarged at this point. If the tachycardia continues, congestive failure develops with cardiac enlargement, hepatomegaly and even more marked dyspnea. Respiratory rates as high as 160/min. have been reported. Splenomegaly and abdominal distension as well as dependent edema may develop. Pulmonary congestion, fever and leukocytosis appear. The attack may stop spontaneously or progress rapidly to a fatal termination. On subsidence of the tachycardia the respiratory distress disappears, the congestive failure clears and the temperature becomes normal. This overall return to normal may be very dramatic within a period of two to six hours, or may be more gradual over a twenty-four to forty-eight hour period.

Paroxysmal tachycardia is classified by interpretation of the electrocardiogram obtained during the attack. Supraventricular tachycardia is differentiated from ventricular tachycardia by the following criteria: 1) regular ventricular rate, 2) normal width of QRS complexes and 3) absence of slower, independent auricular rhythm. However, on certain occasions auricular flutter with 1:1 ventricular response cannot be fully differentiated from supraventricular



EKG before administration of Digitalis. Auricular and Ventricular rates both 280/min.

tachycardia. "The identification of ventricular captures, or of partial ventricular captures (ventricular fusion beats), is the most reliable clue for the differential diagnosis of supraventricular and ventricular tachycardia. The former can be diagnosed when the conducted and ectopic beats are identical in contour regardless of QRS duration; the latter is indicated by the presence of ventricular fusion beats."[6]

Recurrences of tachycardia, paroxysmal in type and other than those associated with the Wolff - Parkinson - White snydrome, do not usually extend beyond the first twelve months of life. In the great majority of instances these recurrent attacks occurred within the first two to four weeks following the initial attack.

Differential diagnosis must include pneumonia, congenital idiopathic cardiac hypertrophy, enlarged thymus and diseases occurring within the first year of life manifesting cardiac enlargement with or without accompanying cardiac failure (infant of diabetic mother in failure, glycogen storage disease, rhabdomyoma). The diagnosis of paroxysmal tachycardia in an infant should be easily determined if it is kept in mind. The pulse rate during the early weeks of life normally varies from one hundred and ten to one hundred and forty, rising to one hundred and eighty or more during the course of illnesses and excitement. Because of the rapidity and variability of the cardiac rate in infants, one may mistakenly believe the rapid rate due to pneumonia in an infant who shows cyanosis, listlessness, prostration and an x-ray picture of pulmonary congestion. These symptoms might suggest a diagnosis of sepsis. Conversely, the rapid rate may be considered unimportant in view of the normal wide variations and may not be given consideration as a primary factor in diagnosis. It is entirely possible that instances of so-called enlarged thymus with attacks of cyanosis have in reality been bouts of unrecognized paroxysmal tachycardia with spontaneous subsidence.

Treatment of paroxysmal tachycardia in infants differs markedly from that in older children and adults. Palpitation and precordial pain are primary features of paroxysmal tachycardia in adults and older children. In contrast to adults in whom it occurs less frequently, congestive failure is the most important single finding in infants.[7, 8] The most important early symptoms in infants are cyanosis and pallor. It is imperative that treatment be started immediately and before congestive failure appears. Unilateral carotid pressure, eyeball pressure and vomiting induced by either apomorphine or ipecac as a means of reflex vagal stimulation are not successful. Bilateral simultaneous carotid pressure is to be avoided; it was attempted in one case and was followed by cardiac standstill and fatal termination. Various drugs have been used in treatment of paroxysmal tachycardia. They are Digitalis, quinine, Quinidine, Mecholyl (acetyl-beta-methyl-choline hydrochloride), Prostigmine, Pilocarpine, morphine, Neosynephrine, Metrazol (pentamethylentetrazol) and acetylcholine bromide.

Mecholyl is mentioned only to condemn its use. Nadas[2] reported five cases in which its use led to disastrous results. One case developed cardiac arrest five minutes after intramuscular injection and died. One developed cardiac arrest which responded to injection of intravenous atropine. In the other three the tachycardia continued even though strong evidence of parasympathetic stimulation was present. Hubbard[3] reported one case in which the use of mecholyl was followed by sudden circulatory failure with collapse. Moore[9] reported a case where use of mecholyl resulted in sudden shock and severe bradycardia; these symptoms were reversed with atropine sulfate. Because of its relative ineffectiveness in terminating tachycardia and the marked toxicity of the drug itself, mecholyl should not be used.

Morphine intramuscularly has been used in several patients. No effect was noted on the tachycardia, but the restlessness was markedly improved.

Neostigmine or Prostigmine is given subcutaneously in doses of 0.05 to 0.5 mgm. This drug is not generally effective and may produce toxic symptoms consisting of gastrointestinal tract hyperactivity, generalized muscular

twitchings, and lowered blood pressure.

Neosynephrine or phenylephrine is given in an initial dose of 0.1 mgm and increased at thirty minute intervals in increments of 0.1 mgm each until a total of 0.5 mgm has been given. Intravenous use of this drug is not generally effective.

Quinidine has been used rather extensively for terminating paroxysms of tachycardia and is the drug of choice in paroxysmal ventricular tachycardia. It has also been very useful in preventing further attacks of tachycardia in the digitalized patient. Dosage is 3 mgms. per pound of body weight in repeated doses at two to four hour intervals, orally or intramuscularly, until either the abnormal rhythm disappears or until toxic manifestations develop. These include diarrhea, vomiting, nausea and forty to fifty percent prolongation of the QRS time. In supraventricular tachycardia quinidine is most often used prophylactically at the rate of 100-120 mgm daily in divided doses. When oral therapy is employed, chocolate syrup very effectively masks the bitter taste.

Digitalis is the drug of choice in the treatment of supraventricular paroxysmal tachycardia. The most commonly used digitalis preparations are digoxin, digitoxin and lanatoside C (Cedilanid). The recommended digitalizing dose is 0.02-0.03 mgm/lb. of body weight to be administered in twelve to twenty-four hours. It is recommended that this dose be given intramuscularly or intravenously, especially in cases where vomiting and/or feeding difficulties are present. Infants tolerate digitalis very well in large doses; digitalis intoxication is not frequent. Rapid digitalization by the use of lanatoside C intravenously was extremely effective in the patient herein reported. Once full digitalization has been effected, oral maintenance therapy at the rate of one tenth of the full digitalizing dose daily should be continued. It would seem wise that digitalis maintenance dosage be continued for at least one year following the onset of the initial attack, since most recurrences appear within the first year of life. It is also mandatory that the oral digitalis preparation in use be fresh. With the patient fully digitalized the recurrence of another severe paroxysm may well be treated by a trial of more digitalis. In this instance digitalis can be given in increasing increments until a total of twice the full digitalizing dose has been given. Should this fail to stop the paroxysm, it is recommended that either acetylcholine bromide or quinidine be used.

Acetylcholine bromide is a very potent, rapidly acting and useful drug in the treatment of paroxysmal tachycardia.[4, 10, 11] It may be used as an alternate for digitalis or in the event that digitalis does not abolish the tachycardia. Its greatest usefulness lies in the fact that when given intravenously its action in converting the paroxysm of tachycardia to normal rhythm is immediate. It is totally ineffective when given intramuscularly or orally.[12, 13] Philipsborn[4] reported one case in which an infant three weeks of age was seen in a moribund state; respirations were gasping, severe prostration and cyanosis were present, heart rate was estimated to be over 300/min. and congestive failure was present. Immediately after intravenous injection of 4 mgms. of the drug bradycardia occurred followed by sinus tachycardia. At the time of conversion to sinus rhythm immediate improvement in color, decreased respiratory rate and decrease in size of the liver were noted. Within twelve to eighteen hours no sign of tachycardia or failure was present. Depression of the sino-auricular node, auriculo-ventricular node, the bundle of His and the auricular musculature as well as ventricular standstill and partial or complete heart block have been demonstrated in experimental animals by the intravenous use of acetylcholine bromide.[14, 15] The effect of acetylcholine bromide is very fleeting. Cholinesterase is present in all body tissues and fluids and destroys acetylcholine within seconds after its intravenous injection. This allows a great margin of safety. However, acetylcholine should never be given without an appropriately calculated dose of atropine sulfate, its antidote, ready for immediate intravenous injection. Since there is only a very transitory or "flash-like" effect from acetylcholine bromide, it may be given intravenously

in doses of one mgm. repeated every three to four minutes until results are obtained. Preferably, the initial dose may be one mgm., this dose progressively increasing by one mgm. increments every three to four minutes until results are obtained. When acetylcholine is given intravenously, withdrawal of blood into the syringe before injection will result in its destruction before the injection can be completed.

It is best to have electrocardiographic tracings before and after the use of any of these drugs. In cases where the potent parasympathomimetic drugs are used, it is wise to have a continuous tracing during the time of drug administration.

Supportive treatment is of extreme importance. Oxygen is essential to combat cyanosis and anoxia. Penicillin or other antibiotic therapy is used for prevention of secondary infection or in the very early stages where the diagnosis is in doubt. Where dyspnea is marked or the respiratory rate is so rapid that feedings by mouth are considered hazardous, naso-gastric tube or intravenous feedings should be employed. When fever is present, antipyretics may be given. Barbiturates or morphine may be given for restlessness.

Paroxysmal supraventricular tachycardia has been observed with its onset in utero.[16, 17, 18] The rapid fetal cardiac rate is usually interpreted as a sign of fetal distress.

Summary

1. A case of paroxysmal supraventricular tachycardia with recurrence in an eight day old infant has been presented.

2. Review of the literature reveals that supraventricular paroxysmal tachycardia in infants is not uncommon; the diagnosis will be made rapidly if it is but kept in mind.

3. Digitalis is the drug of choice in reverting paroxysmal supraventricular tachycardia to normal rhythm; acetylcholine bromide intravenously should be used in preference to digitalis in desperate cases where immediate relief of symptoms is vital.

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5223 South Dakota Avenue, Northeast

Alseroxylon in Neurodermatoses

ARPAD BENEDIG, M.D. New York, New York

MOSES HENRY HOLLAND, M.D. Weehawken, New Jersey

In his discussion of the itch mechanism, Stokes[1] emphasizes that itch is the most distinctive and universal cutaneous sensory disturbance; and states that, "Itch is not caused mainly by the cutaneous eruption, but is basically a nervous symptom with a general background outside the sensory end organ." R. L. Sutton[2] stresses the overlapping of dermatology and psychiatry, and points out that "some emotional disturbance often accompanies and follows some cutaneous disorders, but what cutaneous lesions owe their origins to disturbances in emotions is not decided," and goes on to say that the frustration and misery produced by the seemingly hopeless dermatoses of some unfortunates, interfering with peace, success and social adjustments, are amply able to cause psychic and emotional disturbances. Stokes states that itching is centrally controlled, not by cortical sedatives such as morphine and bromides, but by mid-brain sedatives such as the barbiturates. Pharmacologic studies on Rauwolfia alkaloids indicate that these drugs exert their tranquilizing and mildly sedative actions at sub-cortical (hypothalamic) levels. Ferrara and Pinkus[3] have reported good results from the use of Alseroxylon in the treatment of various dermatoses in which a psychogenic factor is prominent and that the value of the therapy is based upon the ability of Alseroxylon to control pruritus by its central effect on the mid-brain: "The effects of mild sedation, relaxation, tranquilization, and personality improvement may also be partially or wholly responsible for the results obtained." Good clinical response from Alseroxylon has also been reported by J. W. Finch[4] in psoriasis and rheumatoid arthritis, and by J. Genest, et al.,[5] in psoriasis, pruritic dermatitis, atopic dermatitis, various eczemas, lichen planus, and other neurodermatoses.

In a previous report[6] we listed two patients suffering from neurodermatitis who responded very gratifyingly to therapy with a combination of Rauwolfia and Veratrum. F. Reiss[7] has also reported recently on the importance of stress as an etiologic factor in psoriasis. Rein and Fleischmajer[8] have reported recently on the use of tranquilizing therapy in a large number of patients, with various dermatoses, "in whom there was an uncontrollable urge to scratch, or in whom a tension factor contributed to the

From the Department of Dermatology, Jersey City Medical Center, Jersey City, New Jersey, service of Dr. M. H. Holland.

cutaneous disorder. . . . " Many additional reports could be cited; these are, however, typical.

This is a preliminary report on the use of Alseroxylon in a wide variety of neurodermatoses in the outpatient clinic at the Jersey City Medical Center.

Methods and Materials

There were fifty-three patients in this study, thirty males, twenty - three females, the age range was fifteen to eighty years. These patients manifested a wide variety of dermatoses, e.g., pruritic dermatoses, neurodermatoses, lichen planus, contact dermatitis, atopic dermatitis, eczema (food, toxic, contact), pruritus ani and vulvae, psoriasis, pityriasis rosea, and excoriations (habitual scratching).

All of the patients were ambulatory, and were seen in the outpatient dermatology service. While they were told that they were getting a new medication for trial, every effort was made not to "oversell" the new drug. Placebo controls were also used.

The patients were usually instructed to take one or two tablets (2 to 4 mgms.) of Rauwiloid® (or the placebo) at bedtime. In the more severe cases, the dose was increased to one tablet three times (6 mgms.) daily, at approximately eight-hour intervals.

Results

Significant improvement was seen in seventy-six percent of the patients. Subjective improvement was generally quite definite within one to two weeks, usually a good degree of objective improvement was also apparent at that time.

Patients with hypertension and neurodermatoses responded most rapidly and favorably. Reduction of elevated blood pressure and improvement in the neurodermatosis were noted concurrently. However, there was no significant reduction of blood pressure in normotensive patients. It was observed also that patients in whom neurogenic factors were prominent etiologically responded rapidly and favorably. Another type of patient who responded well was the patient in whom emotional upsets occurred frequently.

Some of these patients have been followed for over a year. There is a tendency to relapse in many patients, but when this is seen, the distressing symptoms are much milder than originally, and invariably clear up after one to two weeks of therapy.

A definite tranquilizing effect was seen in virtually all patients. The symptoms, as well as the nervous irritability, consistantly returned, within two to three weeks, when inert placebos were substituted for Rauwiloid.

Side Actions

Side actions were minimal and relatively infrequent. An occasional patient complained of dryness of the throat; two patients complained of stuffy nose; two patients complained of gastrointestinal upsets (nausea, loose bowels, but not frank diarrhea), and one patient complained of drowsiness.

When side actions were seen, the therapy was stopped for one week. It was possible to reinstitute therapy, at a lower dose, in all patients, with no further recurrence of side actions. There was no evidence of mental depression in any patients, neither was there any evidence of increased gastric acidity from the therapy.

The simplicity of the dosage schedule, ease of administration, and low incidence of side actions, coupled with prompt subjective relief, made for good patient cooperation. This has previously been difficult to achieve with this type of patient. Some of the patients still require the therapy, and no evidence of tolerance is apparent, even after one year.

Summary

1. Alseroxylon (Rauwiloid) has been used in fifty-three outpatients with various types of dermatoses. Significant improvement was seen in seventy-six percent.

2. Side actions were infrequent and mild,

* Rauwiloid®, Riker Laboratories, Inc., Los Angeles, California.

and never necessitated discontinuing the therapy.

3. A very useful tranquilizing action was noted in virtually all patients. This was particularly useful in the patients in whom neurogenic or emotional factors were prominent etiologically.

4. Our experience confirms the reports of other investigators concerning the efficacy and safety of Rauwiloid in neurodermatoses.

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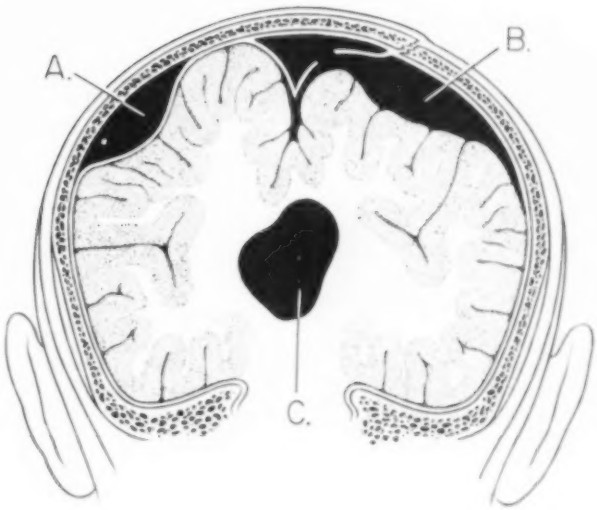
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CLINI-CLIPPING

A. Extradural hemorrhage

B. Subdural hemorrhage

C. Intracerebral hemorrhage



Pharmacologic Horizons

JOHN C. KRANTZ, JR., Baltimore, Maryland

The astute Voltaire cogently commented on the medical practice of his day in the assertion that "Therapeutics is the pouring of a drug of which one knows nothing into a patient of whom one knows less."

Progress through the nineteenth century was slow. The physician's armamentarium was static. Folklore, mysticism, and empiricism were characteristics of most of the drugs in use. This is exemplified by the statement of the great physician, Sir William Osler, shortly after the turn of the century. The advocate of therapeutic nihilism speaks, referring to cardamom tincture compound: "Here, gentlemen, is a very useful drug. It has a beautiful color, pleasant odor, delectable taste, and although we are convinced that it will do the patient no good we are equally certain that it will do no harm." Osler could not anticipate the phenomenal strides which were just over the horizon. The rise of carbon chemistry, fundamental researches in the hormones and vitamin fields, the new anti-infective drugs, were to give the physician a formidable list of effective drugs that were destined to revolutionize medical practice. To use words of Shakespeare as expressed by Decius in *Julius Caesar*, "it was a vision fair and fortunate."

Today it seems trite to assert that the only permanent characteristic of our materia medica is change. During the past decade these changes have occurred with kaleidoscopic rapidity. The magnitude of the mutation is evinced by the statement that eighty percent of the pharmacologic agents available in the armamentarium of the physician in 1958 were not known a decade ago. Indeed the promise for the future appears equally fruitful. No chemical structure seems to be able to thwart the enterprising synthetic efforts of the organic chemist. From his assembly line new organic chemicals roll off at the prodigious rate of about ten thousand a year. With the indefatigable efforts of the pharmacologist and bacteriologist in screening compounds for therapeutic value, one anticipates the demonstration of the usefulness of many of these agents annually in the treatment of disease. The search is exciting, the effort intriguing, and stakes high.

Let us examine some of the basic principles underlying these important and rapid changes in modern therapy. John J. Abel, the father of pharmacology in America, in his Willard Gibbs lecture in Chicago, asserted a generation ago that the source of the drugs of the future would be the animal body. Professor Abel's statement was prophetic. The prophesy found fulfillment in the ever-expanding field of organic chemistry. The laboratory achieved com-

Presented before the Utah State Medical Association, Salt Lake City, September 10, 1958.

petence in the synthesis of complex molecules heretofore synthesized only by the living organism.

It was also fitting and proper that Abel should have announced this prophesy. It grew out of his pioneer work on the isolation of epinephrine and his association with the subsequent isolation of acetylcholine by Reid Hunt which occurred in Abel's laboratory. A half-century later one views in retrospect the large list of therapeutic agents which emulate the activity of the hormone epinephrine. Collectively these are referred to as the sympathomimetic amines. They embrace such important drugs as ephedrine, neosynephrine and isuprel. These compounds are structurally related to the hormone epinephrine. Along with epinephrine, these drugs have found a useful place in the physician's armamentarium in the treatment of bronchial asthma and the relief of nasal congestion. Locally they serve as vasoconstrictors in conjunctivitis and in localizing the anesthesia produced by the injection of such local anesthetic agents as procaine. Their use in therapeutics stems from their action in stimulating the effector mechanism of the adrenergic nerves, thus emulating the action of the natural hormone epinephrine. The companion hormone to epinephrine, namely, norepinephrine or arterenol, was introduced into medical practice about five years ago. It is available under the name of Levophed.® Its action is mainly vasoconstrictor and does not elicit the dilator effects of epinephrine in certain of the peripheral blood vessels. Its principal use is to elevate blood pressure in shock-like states, for which purpose it has served most effectively. More recently the role of epinephrine and norepinephrine in thinking disturbances is being explored.

It has been known for a half-century that ergotamine, one of the principal alkaloids of ergot, was capable of blocking the action of epinephrine on the blood pressure. Indeed in ergotamized cats, epinephrine produces a fall, rather than a rise, in blood pressure. The possible therapeutic use of this blocking action was thwarted by the numerous untoward side effects of ergotamine. More than a decade ago the synthesis of Priscoline® made available for the first time an agent capable of blocking the action of epinephrine and norepinephrine on the peripheral circulation. Priscoline has been followed by Dibenzyline® and Ilidar.® These compounds enter into competitive inhibition with the adrenergic hormones which constrict the peripheral blood vessels and thus produce peripheral vasodilatation. They have had wide usefulness in peripheral vascular disease including Buerger's disease, Raynaud's disease, frostbite, causalgic states, and thrombophlebitis. Another compound of the series of adrenergic

blocking agents which elicits a transient response is Regitine.® Regitine is most effective as a diagnostic agent in the diagnosis of pheochromocytoma.

Cholingeric Agents and Cholingeric Blocking Agents

Acetylcholine, which was isolated from the adrenal medulla by Reid Hunt in Professor Abel's laboratory shortly after the turn of the century, has been shown to play a multiplicity of roles in the animal body. It is the neurohormone of the parasympathetic division of the autonomic nervous system. It appears to be the agent responsible for neuronal impulses across the synapses in the central and autonomic nervous systems. Pharmacologically it elicits three principal responses. These are vagal stimulation with concomitant bradycardia, peripheral vasodilatation and the contraction of skeletal muscle. Unlike epinephrine, this hormone has not had widespread use in medical practice. However, many drugs which are related to acetylcholine chemically, and pharmacologically mimic its action, are used extensively. Mecholyl® is useful in paroxysymal tachycardia. Urecholine® is useful in postoperative urinary retention and postoperative abdominal retention. It is well established that the action of acetylcholine in the body is terminated by the enzyme cholinesterase. This enzyme hydrolyzes acetylcholine into choline and acetic acid. Agents which inactivate cholinesterase thus prolong and intensify the action of acetylcholine. Physostigmine is such a substance. Its synthetic analogue prostigmine or neostigmine is much more effective therapeutically than is physostigmine. It is the drug of choice in the treatment of myasthenia gravis.

The cholinergic blocking agents are one of the most generally-used type of drugs by physicians. Atropine is the oldest and still most generally-used cholinergic blocking agent. Acetylcholine initiates the motor and secretory functions of the gastrointestinal tract. Therefore agents which block its action tranquilize gastrointestinal hypermotility and diminish the gastric secretion of hydrochloric acid. It follows, therefore, that they would have usefulness in the treatment of gastrointestinal hypermotility and also in the treatment of peptic ulcer, which has so fittingly been called "the wound stripe of civilization." What an avalanche of new drugs have been developed in this field! Abel's prophesy has been abundantly fulfilled in this facet of therapy.

In the therapy of peptic ulcer a series of comparatively new compounds have taken their place along with the anticholinergic agents. These are the anticholinergic agents, which also elicit autonomic ganglionic blockade. Among these compounds are Banthine,® Probanthine,® Antrenyl,® Monodral,® and Prantal.® It appears that in certain cases of hypermotility of the gastrointestinal tract any one of these might be superior to atropine. It is doubtful, however, that these compounds at therapeutic dosage levels achieve autonomic ganglionic blockade. Their principal response appears to stem mainly from their potent anticholinergic action. Evidence of this absence of autonomic ganglionic blockade is shown by their failure to block the gastric acid secretion concomitant to the injection of insulin. This is readily blocked by autonomic ganglionic blocking agents such as hexamethonium. The work of Johnson and Woods (1954) indicates that these drugs can achieve autonomic ganglionic blockade only at a dosage level which will produce pronounced symptoms of peripheral anticholinergic activity.

A drug of choice in this field is difficult to assess. A very large segment of patients requiring antispasmodic therapy is controlled adequately and with fewer side effects with atropine than with any other drug. In either category of the spasmolytics the anticholinergic of the atropine type, such as Trasentine® and Syntropan,® or the newer variety allegedly eliciting autonomic ganglionic blockade, the physician's task is a matter of selectively fitting the drug to the patient's needs with a minimum of side effects.

Perhaps nothing in the realm of human achievement has conferred more solace and comfort to the human race or thwarted more

suffering and anguish than anesthesia. It has made modern surgery possible. Within the last decade a series of useful anesthetic adjuncts have been introduced to provide complete muscular relaxation even in the lighter planes of anesthesia. The first of these was *d*-tubocurarine, the alkaloid of the Indian arrow head poison, curare. Recently the alkaloid has been synthesized. It was observed that in this comparatively complex molecule there are two quaternary nitrogen atoms. Barlow and Ing conceived of the idea that these two quaternary nitrogen heads separated at a distance of about 14 A° were the active groups in *d*-tubocurarine. These are the groups which compete with acetylcholine at the myoneural junction of skeletal muscle and produce an impedance of end plate depolarization, and thus prevent muscle contraction.

They prepared a compound, Sycurine® or C_{10}, which contains ten methylene groups joining two quaternary nitrogen atoms spaced the same distance apart as they occur in *d*-tubocurarine. Their concept was correct; Syncurine is a more potent neuro-muscular blocking agent than is *d*-tubocurarine.

This was followed by the introduction of succinylcholine, which chemically is a dimer of acetylcholine. This compound elicits a flaccid muscular relaxation which is transient owing to the fact that succinylcholine is inactivated by cholinesterase. This compound is administered by slow intravenous drip, providing an evanescent muscular paralysis which is readily controlled. Again, these advances in the field of anesthesia fall within the purview of Professor Abel's prophesy.

This concept of blocking acetylcholine at different sites has been extended to the treatment of hypertension. Hexamethonium chloride blocks autonomic ganglia. When the sympathetic ganglia are blocked by opposing the action of acetylcholine at this site the arterial pressure is reduced. Hexamethonium was followed by Ansolysen,® Ecolid,® and now Inversine.® All of these agents which are useful in the treatment of hypertension appear to have been the result of the chemotherapeutic effort to block acetylcholine at its various sites of action.

Mental Illness

Mental illness and its treatment are one of the major problems of society. For its solution, man anxiously awaits advances in medical science directed toward this end. To emphasize the vastness of the problem one needs only to state that approximately fifty per cent of the hospital beds in the United States are occupied by the mentally ill patient. In the United States nearly two hundred thousand people are affected annually with mental disease, and about 1.2 billion dollars are spent annually in its treatment. Progress in the treatment of the mentally ill with drugs has lagged behind the rapid advances made in other fields of medicine such as in the treatment of infectious diseases and endocrine disorders. Fortunately, within the last decade definite advances have been achieved and served to point out first, that the problem is not an insurmountable one, and second, that thinking disturbances treated with drugs of certain chemical configurations may serve to elucidate some of the baffling functional brain changes in mental illnesses.

LSD_{25}, Adrenaline, Serotonin, and Mental Illness. Evidence appears to be emanating from several independent sources that hallucinogenic drugs interfere with the adrenaline cycle in the brain. Lindemann (1955) observed that the symptoms of schizophrenia are aggravated by injections of adrenaline. Adrenaline is oxidized by tissues to adrenochrome, which contains an indole nucleus which is present in the molecule of LSD_{25}. Osmond (1955) reported that adrenochrome elicited changes in the EEG pattern of man and inhibited cerebral metabolism in rats.

Another compound containing the indole nucleus which is present in the tissue metabolism is serotonin. Serotonin is 5-hydroxytryptamine. Serotonin is the vasoconstrictor factor of blood platelets; it occurs also in the brain. It appears that in addition to its role in blood coagulation, serotonin is concerned with neuronal metabolism. Serotonin antagonized

the LSD_{25}-induced mental syndrome. Thus the antagonism which is shown by serotonin to the LSD_{25}-induced mental syndrome may be due to an interference with serotonin-mediated neuronal metabolism by LSD_{25}. Indeed Woolley and Shaw (1954) suggest that since the LSD_{25} syndrome mimics schizophrenia, this thinking disturbance might be due to a defect in cerebral serotonin metabolism.

Marrazzi and Hart (1955) studied the neuronal transmission of impulses over a synapse in the cat's brain. The hallucinogenic compounds mescaline, adrenaline, and LSD_{25} were compared. Their effects were qualitatively similar. The synaptic inhibition of serotonin was found to be quantitatively six to eight times greater than that of LSD_{25}, and twenty-five times greater than that elicited by adrenaline. These investigators suggest that thinking disturbances may be the result of distorted balance between cholinergic transmission and adrenergic inhibition in susceptible cerebral synapses. Hallucinations may result from stimulating phenomena antagonizing the normal inhibitory processes. Serotonin has failed to improve schizophrenic patients to whom it has been administered. On the other hand, reserpine containing an indole nucleus, is of definite value in the disease. The principal action of reserpine in the brain appears to be one of producing a biochemical change so that the cells can no longer maintain serotonin at a high concentration against a low extracellular level of the compound. The cell-binding sites for serotonin are modified or occupied by reserpine. When 5-hydroxytryptophane, which is a precursor of serotonin, is fed to rabbits previously treated with reserpine, serotonin is formed normally but is not bound by the cerebral cells (Brody et al., 1956). It is possible that the action of reserpine is mediated by the unbound serotonin, which is displaced from its cellular tissue sites prior to its conversion to 5-hydroxyindole acetic acid by monoamine oxidase. If one can accept as a tentative hypothesis that the tranquilizing action of reserpine is produced by its displacement of serotonin from its cellular tissue sites, an explanation of the psychic stimulation response to Iproniazid (Marsilid®) becomes manifest. Marsilid inhibits the action of monoamine oxidase and thus protects serotonin from destruction by the oxidase in brain tissue. Thus, Udenfriend et al. (1957) showed that Marsilid when fed to rats and rabbits can produce a three-fold rise in cerebral serotonin level.

It becomes clear that mental disturbances similar to schizophrenia can be induced by compounds containing the indole nucleus of which LSD_{25} is a striking example. Further, other substances which contain in their molecules the indole nucleus such as reserpine can block the syndrome. Besides, it does appear that the antagonism is associated with neurohormonal activity of serotonin. In mental disturbances and their treatment with drugs this substance may play a dominant role.

The Treatment of Malignancy

Achievements in the field of infectious disease and the control of many of the degenerative diseases such as diabetes and pernicious anemia issue an impelling challenge to conquer man's dreaded enemy cancer. Successes have been achieved but much remains to be accomplished. Abel's doctrine has also been cogently applicable in this field. For example, folic acid was shown to cause a marked hyperplasia of the bone marrow of laboratory animals. This hyperplastic state is reversible when animals are placed on a folic acid-deficient diet. This suggested the use of compounds structurally related to folic acid in the treatment of leukemia. Outstanding among the folic acid antagonists useful in the treatment of acute leukemia is aminopterin, which is 4-amino folic acid.

Further in this field of study, Hitchings synthesized 6-mercaptopurine (Purinethol®). Burchenal et al. (1953) found this compound useful in the treatment of acute and chronic myelogenous leukemia. Hitchings and his associates (1950 et seq.) prepared this and other compounds for their possible chemotherapeutic activity based upon the probability that inter-

ference with nucleic acid synthesis would be more damaging to parasitic than to normal tissues.

6-Mercaptopurine has been shown to be an antagonist in microbiological studies to both hypoxanthine and adenine.

The fact that Purinethol has been active clinically in certain anti-folic-resistant leukemias appears to indicate that its mechanism of action is based upon its antipurine rather than an antifolic acid action. These preliminary gains in this field bespeak greater strides in the therapy of malignant disease in the years which lie ahead.

Conclusion

No discussion of this kind would be complete without reference to another important facet of modern medical science, namely, the initiation of large scale medical research programs. Research may be likened to a bevy of quail soaring high among the enveloping clouds. An occasional isolated shot might infrequently bring down a bird. This analogy characterizes medical research prior to World War II. Now many guns with new sights are aimed with rapid-firing devices at the illusive target. Successful hits on the target will increase with a geometric progression. This is the modern approach which by virtue of its repetitious impact of men and funds will achieve greater goals than the random shooting of the past.

The outlook on the pharmacologic horizon of the future is bright. The goal has been set. The die is cast and the direction of progress with concerted effort is established. One is reminded of this timeless comment of Sir Frederick Hopkins, which is fitting to this era of pharmacologic progress: "In a country rich in gold, observant wayfarers may find nuggets on their path, but only systematic mining may provide the currency of nations."

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M. MURRAY SCHECHTER, M.D.
Miami, Florida

SUPERIOR VENA CAVA

The major manifestations of superior vena cava obstruction are due to conditions which interfere with the flow of blood through the superior vena cava. Essentially the same manifestations are found in bilateral innominate vein obstruction or arteriovenous fistula between the superior vena cava and the ascending aorta. Interest in the syndrome has been renewed recently by the perfection of techniques which permit better localization of the obstruction as well as by better clinical descriptions of the nature of the obstruction. In addition, further interest has been stimulated by the advent of relatively new and more aggressive techniques of treatment including radiation and surgery.

The clinical phenomena of superior vena cava obstruction result from the interference with the return flow of blood through the superior vena cava to the right heart. This is manifested by an increased venous pressure in the upper extremities and thorax, delayed circulation time in the upper half of the body and diversion of the main blood stream flow through collateral channels. In addition to these manifestations the primary pathological process which caused the obstruction may cause associated signs as well.

The diagnostic criteria of obstruction of the superior vena cava may be summarized as follows:

1. A significantly elevated venous pressure in the upper half of the body.
2. Edema and cyanosis of the face, neck and upper extremities. The cyanosis is usually a peculiar ruddy type of cyanosis and is aggravated by assuming the horizontal position. Many patients complain of a feeling of fullness or congestion in the head after reclining or stooping and these symptoms are relieved upon assuming the upright position.
3. Development of collateral circulation which usually includes the observation of visibly dilated superficial veins over the upper half of the body, particularly the chest. The four main routes of collateral circulation are:
   a. The azygos system
   b. Internal mammary system
   c. Lateral thoracic system connecting to the superficial epigastric and femoral veins.
   d. Vertebral system

Relatively simple laboratory aids are available for further elaboration of the cause and location of the obstruction. Phlebography has been described by several authors and is par-

Dr. Schechter is an Instructor in Clinical Medicine, Department of Medicine, University of Miami School of Medicine, Miami, Florida.

OBSTRUCTION

ticularly well reviewed by Katz et al.[4, 9] It consists of an intravenous injection of a radiopaque material with radiographs taken during and immediately following the completion of the injection. We have preferred to use the veins of the antecubital fossa although the external jugular vein could be used as well. The only disadvantage in using the antecubital fossa veins is the possibility of error in interpretation when the obstruction occurs solely in the axillary or brachial veins. A thirty-five percent or seventy percent Diodrast solution is ordinarily used and approximately thirty cubic centimeters of the contrast medium is given via a rapid injection. This technique has the advantage of being relatively simple, requiring little preparation or unusual equipment, and is relatively safe. It usually produces an accurate knowledge of the location of the obstruction, and frequently outlines the collateral circulation excellently. On some occasions the nature of the obstruction can be determined or confirmed using phlebography. Roentgenographic techniques including planograms and multiple views further help to elaborate on the nature of the primary lesion. The venous pressure is the best single direct aid in the diagnosis of this syndrome, as well as an aid in following patients particularly in respect to relief of the obstruction or establishment of collateral circulation. Venous pressure is usually taken in the antecubital veins using a three-way stopcock, spinal manometer and 2½ percent citrate solution. Hussey et al.[3] have described an "Exercise Test," in which the patient opens and clenches the hand forcefully and repeatedly for one minute while the venous pressure is being measured in the same arm. Normally, or in patients with heart failure, this exercise test causes little or no change in the venous pressure. If there is obstruction of the venous system through which the arm veins are drained, there is a prompt rise of over ten millimeters of citrate. The venous pressure in the legs is usually normal unless there is concurrent obstruction to the inferior vena cava as well. Hussey et al. have also described a paradoxical effect in the oscillation of the liquid in the manometer in relation to the respiratory efforts. Ordinarily in the normal person the liquid level falls slightly on inspiration and rises slightly on expiration. When the superior vena cava is completely obstructed a paradoxical effect may be noted, in that the column will rise with inspiration and fall slightly with expiration. This is said to be evidence that the principal collateral channels enter the inferior vena cava. In addition, this is also said to indicate that the level of obstruction is below the origin of the azygos vein where it enters the superior vena cava.

Another method described to show the level of obstruction of the superior vena cava clinically is by encircling the lower part of the chest with a constricting band which blocks the superficial veins carrying blood to the inferior vena cava system. If the venous pressure does not rise after this band is inflated or tightened the obstruction is said to be above the azygos vein and the main collateral circulation is not affected by the superficial constricting band. The circulation time is said to be prolonged in the majority of patients, but we have not found this to be a very helpful test and have included it only for the sake of completeness. Many patients have a normal circulation time despite evidence of extensive collateral circulation and complete obstruction of the superior vena cava.

Incidence

The majority of the reported instances of superior vena cava obstruction fall within the forty to sixty year-old age group, because this is the age group in which the main etiological entities are found; namely, bronchogenic carcinoma and aneurysms of the ascending aorta. Eighty percent of the reported cases occur in males, again because the main etiologic factors are more common in males. Most of the case records reported in females are due to the statistically lesser important causes including thromboses of the vena cava, both spontaneous and due to trauma.

In the patients in our series who were examined by necropsy dissection revealed infiltration of the superior vena cava by tumor tissue in all but one case of malignant neoplasm. In the eight-year period when our series of patients were observed, a total of two hundred and ten histologically proven instances of bronchogenic carcinoma were seen, with twenty patients manifesting superior vena cava obstruction. This represents an incidence of ten percent of superior vena cava involvement as a complication in primary carcinoma of the lung. Spontaneous thromboses or thromboses following trauma to the chest have been reported and were extensively reviewed by Ochsner and Dixon.[6] This cause of superior vena cava obstruction is a rare and unusual entity. When it has occurred patients have been reported to live for many years without undue difficulty. The syndrome of obstruction of the superior vena cava can also be caused by an arteriovenous fistula between the ascending aorta and the superior vena cava.

In patients with malignant intrathoracic neoplasms the obstruction of the superior vena cava is generally caused by infiltration of the venous wall by tumor tissue with both tumor and secondary thromboses. Considerable mention is made of the danger of bronchoscopy, anesthesia, excitement and other factors which might cause intracranial rupture of the draining veins. Although this is a distinct and rational possibility with the markedly increased venous pressure, distended veins, and stasis of blood flow, we have not observed this complication in any one of our patients. A review of the literature failed to provide any further information on this question, and we are of the opinion that this complication does not occur as frequently as is feared. The walls of the veins are capable of considerable distention without rupture, and this is probably the reason such intracranial accidents are not seen.

Treatment

The dramatic appearance and acute onset of obstruction of the vena cava is a powerful stimulus to the clinician to begin early treatment. As a consequence, various forms of therapy have been frequently reported in attempts to offer symptomatic improvement to the patient and cause regression of the basic lesion with restoration of more normal blood flow. These therapeutic measures have included surgical exploration and relief of the obstruction by mechanical means, radiotherapy, and chemotherapy with mechlorethamine hydrochloride (Mustargen®) and triethylenemelamine, each method used alone or in combination with others. When the reports are reviewed however, there is some question as to the actual effects of treatment upon the occluded vessel.

Doubts as to the rationale of the methods of treatment in use are based upon the sequence of events following all forms of venous occlusion under any circumstances. The natural establishment of collaterals will in itself serve to give considerable relief of symptoms in the area drained by the obstructed vessel. This occurs no matter what the cause of the original block and even though persistence of the obstruction can still be demonstrated after the improvement occurs. A review of the literature and personal experience indicates that treatment cannot be evaluated by symptomatic or superficial observation alone. The effectiveness of treatment in the syndrome can be determined only by subsequent visualization of the involved vein. This can be achieved during life by phlebography or postmortem by necropsy.

In obstruction due to neoplastic infiltration of the superior vena cava the tumor invades the wall and thus occludes the lumen. This obstruction is the result of puckering or stenosis of the vessel; a thrombus is usually associated which frequently contains tumor. Studies at necropsy have revealed that this type of obstruction is not relieved despite intensive treatment. Therefore, any improvement which occurs is due to the natural sequence of events in the formation of collaterals. Interestingly, one patient in our series never manifested symptoms or signs of obstruction during life but complete obstruction of the vein was found at necropsy. The organized thrombus found within the lumen is sufficient evidence that the block had been present for some time prior to death.

In obstruction due to compression there is mechanical pressure on the venous wall causing the obstruction of the blood flow. The wall itself is not involved and the lumen is generally patent unless secondary thrombosis has occurred. Elimination of the compression by appropriate therapy will relieve the obstruction unless there is secondary thrombosis. This group includes aneurysms amenable to surgery, constricting bands, and may include specific inflammatory processes such as tuberculous mediastinal adenitis. It is possible that certain lymphomas may produce occlusion by pressure but we have not encountered a case of this sort in our series. The rare patient with primary thrombotic obstruction will follow a natural course. Occasionally, recanalization of the thrombosed vessel will occur. Recovery will be independent of treatment and depends entirely on the establishment of collateral circulation or recanalization of the vessel. If the patient survives long enough and the signs and symptoms persist over a prolonged period, this strongly suggests interference with the collateral flow, principally the azygos vein. If the underlying process is benign, surgery may be of benefit in the unusual, rare patient with a constricting band or scar.

It has long been known that the symptoms and signs of venous obstruction will gradually subside spontaneously as the collateral circulation grows more efficient despite persistence of the block. Collins et al.,[14] and Ray and Burch[15] have described thrombophlebitis of the pelvic veins. In all instances, the edema, venous pressure, and color changes tended to subside with time. The same findings have been noted by Roussak and Heppleston[16] in malignant disease occluding the inferior vena cava. In obstruction of the superior vena cava this improvement is even more likely to occur spontaneously because of the effect of gravity on the return blood flow.

This study demonstrates that the syndrome may persist or progress despite intensive treatment. Improvement occurs in approximately one-third of the treated patients although the obstruction persists. Our evidence indicates that a good clinical response in vena cava obstruction produced by carcinoma and other infiltrative diseases depends upon the efficiency of the collateral circulation, chiefly the azygos vein. Generally, if the block involves or is below the azygos orifice, improvement will be minimal. When there is compression of the vein from without, as in aortic aneurysms, improvement may be obtained by removal of the mediastinal mass. However, even after the compressing agent is removed, the obstruction may persist, indicating the important role of secondary thrombosis within the vessel. There appears to be no place for surgery in the therapy of the syndrome when it is produced by bronchogenic carcinoma. In those less common conditions in which true external compression exists, excision of the mass or adhesion which compresses or constricts the vessel is indicated. Under such circumstances immediate relief of the syndrome will depend upon the absence of a secondary thrombus. If a thrombus is present, recanalization may result in the gradual disappearance of the syndrome. Otherwise, improvement will depend entirely on the collateral circulation. In rare cases of persistent superior vena cava syndrome due to azygos vein involvement from benign causes, it may be possible to duplicate Curtis' operation by reinserting the azygos

vein below the point of obstruction.

While radiotherapy and chemotherapy do not relieve the primary block when it is due to an infiltrative tumor, they still may be of value in the treatment of the primary disease and in protecting the venous collaterals when the tumor is sensitive to these agents. Such improvement will usually be associated with radiologic evidence of reduction in size of the mediastinal mass. Anticoagulants may be of value in preventing propagation of thrombus and may thus help to preserve the collateral circulation. Specific therapeutic agents should be used when there is a definite etiology for the mediastinal process, such as tuberculosis. Treatment with radiotherapy or chemotherapy is indicated in all cases of lymphoma but relief of the underlying vena caval block will depend upon the mechanism of the obstruction. If the vein is compressed by enlarged mediastinal lymph nodes, restoration of flow through the superior vena cava should occur unless a thrombus has formed. Details as to mechanism of the block in patients with malignant lymphoma are difficult to obtain. Willis reports one patient having Hodgkin's disease in whom the vein was infiltrated and occluded by the malignant process.

Watson cites a number of authorities (Ghon and Roman, Paltauf and Kundrat) who had similar experiences.

Summary

A review of the superior vena cava syndrome as caused by obstruction of the superior vena cava is made. The major manifestations found in this syndrome include cyanosis and edema of the face, neck and upper extremeties, markedly elevated venous pressure in the upper extremeties with a normal venous pressure in the lower extremeties, and distention of the superficial veins of the upper portion of the body with the flow being caudad. Almost all instances of superior vena caval obstruction by intrathoracic malignant tumors are caused by direct invasion of the venous wall by tumor tissue. A considerable decrease in the incidence of obstruction caused by aneurysms of the ascending aorta is now being seen and it is likely that this cause of superior vena cava obstruction will become relatively unimportant in future years. Techniques for aiding in the diagnosis, localization and elaboration as to the nature of the obstruction are described. Because of the ability of veins to distend and enlarge without rupture, intracranial hemorrhage is relatively rare despite the markedly increased pressure within the collateral veins. The syndrome of superior vena cava obstruction is not nearly as rare as was formerly believed, and should be searched for and studied more frequently. We have found an incidence of ten percent involvement and obstruction of the superior vena cava in primary carcinoma of the lung. There is no place for surgical therapy in the treatment of the syndrome when it is due to infiltrative tumor. If radiotherapy or chemotherapy is used, it should be for its effect upon the primary tumor and secondarily to help preserve the collateral circulation. These forms of therapy will not relieve the obstruction when it is due to infiltration of the vein wall.

Excision of a mass producing compression, such as an aneurysm, gives relief of the syndrome unless secondary thrombosis has occured. It is obvious that the effectiveness of therapy in this syndrome depends entirely upon the underlying disease process. Even though the venous obstruction may persist, the natural tendency is for the symptoms and most of the signs slowly to be relieved spontaneously by the formation of collaterals.

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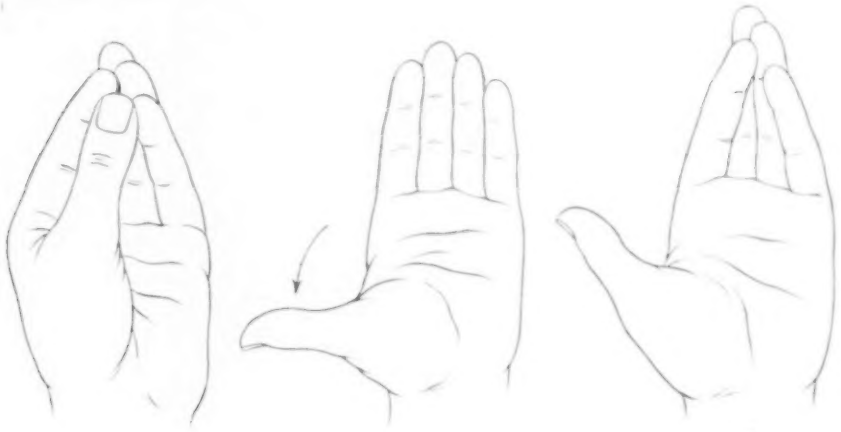
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A test for nerve injury. Ability to position the fingers and thumb as shown below indicates to the physician that the patient has:

A. Normal Median Nerve B. Normal Radial Nerve C. Normal Ulnar Nerve



A. B. C.

PAUL O'HOLLAREN, M.D.
Seattle, Washington

A TECHNIQUE FOR EARLY DIAGNOSIS

Symptom Analysis of Alcoholism

Although alcoholism is the fourth most prevalent disease in this country today, little has been done in research that enables medical people to make an early diagnosis of the presence of the disease, or of the potential alcoholic. Alcoholism, heretofore, has been diagnosed usually on the basis of the irreparable damage it has done to the health of the patients long after they have become confirmed alcoholics. This study is an attempt to place a diagnostic yardstick in the hands of medical personnel to enable them to diagnose alcoholism long before the disease has an opportunity to cause irreparable damage to patients in the areas of their social, physical, mental, emotional, neurological and psychological well-being.

As in the case of most diseases alcoholism actually presents a clearly defined syndrome even in the early social drinking stages. Through research and clinical observation, it has been ascertained that these syndromes are usually found in a fairly well-defined sequence of occurrence and that there is a varied, but characteristic time lapse between the onset of one symptom and the beginning of the next. By recognizing the presence of time-ordered symptoms of the disease, the medical profession becomes equipped to diagnose and treat the patient long before he suffers irreparable damage as a result of alcoholism.

Methodology

A group of five hundred and fifty-four male, former patients of Shadel Hospital, Seattle, Washington indicated on a questionnaire at what age they began their social drinking and also listed the ages when they experienced certain symptoms that are known to be characteristic of alcoholism. The most common ages for beginning social drinking were eighteen and nineteen. There were one hundred and forty-seven patients in this group of five hundred and fifty-four who had started their social drinking during these two years. These one hundred and forty-seven patients represented people from all walks of life and from every strata of our society. The arithmetic mean age of onset of each symptom was then computed for the entire group and it was then possible to determine the arithmetic mean time lapse between the beginning of one symptom and the onset of the next symptom. From this data it was possible to see a pattern of time-ordered symptomatology characteristic of the entire group. This data confirmed the clinical experiences of the medical staff of the hospital, who over a period of twenty-three years, have treated over ten thousand alcoholic patients.

Results

Symptoms of alcoholism are apparent in the social drinkers who are potential alcoholics as early as two or three years after they began their social drinking. These combined early stage symptoms form a syndrome in the Developmental Phase of alcoholism, lasting ap-

Dr. O'Hollaren is Chief of Staff at Shadel Hospital, Seattle, Washington.

proximately 12.5 years. The symptoms, noticeable very early, include drinking more and drinking faster than social drinking friends.[1] This behavior is followed by sneaking drinks and drinking doubles and triples while friends are drinking singles. This resulted in the patient becoming more drunk than his social drinking friends. Shortly thereafter, the patient finds that he becomes drunk whenever he drinks, although he often does not wish this to happen. During the developmental phase of alcoholism the potential alcoholic finds himself becoming more and more preoccupied with thoughts of alcoholic beverages, recreation associated with drinking, and relief drinking for the cares and stresses of the day. Another symptom to be found in the developmental phase is the weekend drinking bout which may carry over into the first of the week. That is to say, the patient may need Monday morning to recuperate and hence, his absenteeism from work might be increasing.

It is during this phase of alcoholism that the physician may be able to see the developing pattern of the disease in his patient, particularly if he knows the patient well, or if in questioning, some of the telltale symptoms are exposed. However, all too often the patient is unable to see, or unwilling to admit that as yet his drinking is a problem. He is, however, rapidly approaching the next phase which carries him a good deal further towards complete alcoholism.

The next phase of alcoholism is medically referred to as the optimal treatment phase for it is during this time that the drinking becomes so much more of a problem that the patient is more receptive to treatment if he is frankly informed of the danger of his drinking pattern and the need for immediate care. It is certainly at this time that the physician should urge his patient to accept help in order to prevent the disease from causing irreparable damage to his central nervous system and to his environment. The duration of the optimal treatment phase is approximately 5.9 years and hence, while it is the best time to treat the disease, it is also the shortest period of time in which to detect the presence of alcoholism. It is during these 5.9 years the patient begins to protect his supply of liquor, i.e.: hiding bottles, buying large quantities and wondering if there will be enough liquor to last for a particular occasion. This behavior is followed closely by drinking before breakfast. Over ninety-five percent of all alcoholics treated at Shadel Hospital have admitted drinking before breakfast during their drinking experiences. Certainly this is one of the strongest criteria of alcoholism. Drinking alone occurs almost concomitant with drinking before breakfast.

During the optimal treatment phase the patient develops a good many defense mechanisms about his drinking. He will undoubtedly have many rationalizations about his drinking behavior and tend to minimize the true extent of his drinking. He may claim he never gets "drunk" which could well be true. Rather, he maintains a high level of blood alcohol all day without noticeable impairment of his motor control. This type of drinking behavior is certainly characteristic of some alcoholics, but eventually they are unable to maintain this level of drinking without showing overt intoxication. Friends and close acquaintances of the patent may be unaware that the patient drinks excessively, but the families of the patient are surely aware of this and they can provide a great deal of needed information to the family physician if questioned. The aforementioned symptoms are tell-tale signs of the disease and will certainly point out the patient's need for immediate treatment.

Other symptoms of the optimal treatment phase include getting intoxicated on less liquor. The patient finds that more and more he is "drunk" on very little and seems to have lost his capacity to "hold his drinks." It is during this period that the patient may be able to admit to himself and eventually to others that drinking is a problem. During this time, the patient is decreasingly able to control the

[1] O'Hollaren, P. and Wellman, W., Alcoholism, Drinking Pattern and Birth Order of 738 Alcoholics, Northwest Medicine, 56:811-813 (July) 1957.



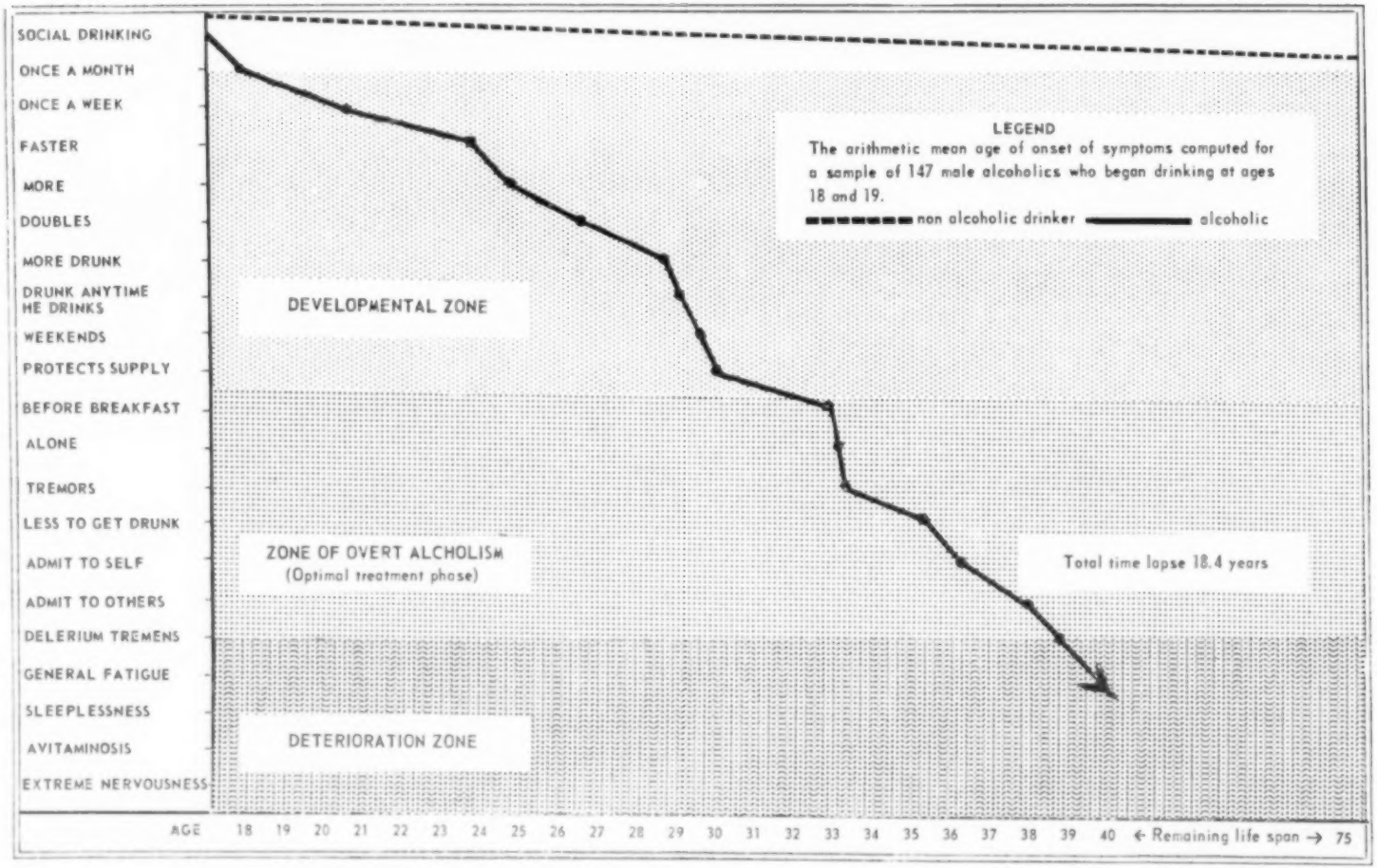
amount of liquor ingested and he frequently loses control of his behavior while drinking.

Usually at this time in the patient's drinking experiences he is experiencing marital problems, financial troubles, and occupational difficulties. The wife of the patient sometimes can be of great assistance in confirming the doctor's diagnosis when questioned about these facets of the patient's life. Unless the doctor is able to confront his patient in a forthright manner with the diagnosis the patient may progress into the Deterioration phase of the disease. These symptoms include alcoholic tremors, extreme nervousness, sleeplessness (in some cases), avitaminosis and general fatigue. The deterioration phase of alcoholism is so-called, because the patient does just that. He deteriorates physically, socially, maritally, emotionally, occupationally, and neurologically. Treatment becomes more difficult and the prognosis rapidly deteriorates beyond this point.

Comments

There are several important points to be made in connection with the time-ordered sequence of symptoms as they appear in the accompanying graph. In some persons the symptoms occur in varying sequence, but the progression towards alcoholism is none the less positive. The time lapse between the onset of these symptoms may also vary a few degrees. However, generally speaking this time lapse is a good index of exactly how far the patient is from the next phase of symptom of the disease. The time required for the development of alcoholism averages about eighteen years. In this particular group the entire time lapse from the beginning of social drinking until the patient admitted to others that his drinking was a serious problem was 18.4 years. This eighteen year span is characteristic of alcoholics, regardless of when they begin their social drinking, with exceptions in individual cases, of course.

If the family physician has established rapport with the patient, and suspects alcoholism is the problem, then specific test questions that would elicit symptoms as listed in the graph can be asked of the patient to ascertain where he or she is in the alcoholism syndrome. Frankness on the part of the doctor in discussing the diagnosis is of great importance. The family may have encouraged the patient to seek medical help. If the doctor does not confront



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the patient with the diagnosis he gives the patient further rationalization, i.e.: "The doctor said to cut down a little, but there's no real problem." The doctor can render real aid not only to the patient, but to the family as well, by frankly telling the patient what his problem is and by encouraging him to seek help and treatment. By the same token a positive medical verdict of total abstinence will often result in the patient accepting specific therapy and thus prevent the further progression of the disease.

All too often it is a delicate and difficult topic to discuss with the patient so conflict is avoided by encouraging him to start tranquilizers, nerve medicine and "to cut down a little." This is not an adequate treatment method and will do little to stave off the inevitable results of alcoholism. The medical profession can and should rise to the challenge of successfully treating the disease.

Conclusions

The startling uniformity of the duration of the drinking history in this large representative group of alcoholic patients who have been reported in this paper is very strong evidence that this disease is fundamentally and basically physiological. The endless variations of personality types are apparently superimposed upon a constitution limited in its capacity to tolerate alcohol in any form. It is difficult to conceive of emotional or psychological causation achieving this degree of mathematical uniformity.

A great many physicians adhere to the concept that alcoholism is primarily a psychological disease instead of physiological and therefore direct their major treatment efforts toward psychotherapy. It appears that better results might be obtained by focusing the major treatment and research effort toward the primary physiological component of the illness. If personality problems exist, of course, they too must be treated.

This concept of physiological causation of alcoholism explains its permanent nature, and emphasizes the necessity for early, intense, complete and continuous management such as is required in a severe diabetic.

Summary

Alcoholism presents a clearly defined time-ordered sequence of symptoms that are recognizable even in the early social drinking years of the alcoholic. The symptoms are listed as they occurred in a series of five hundred and fifty-four male former patients of Shadel Hospital, Seattle, Washington. Not only does the recognition of this typical progress in the development of a symptomatology make diagnosis of the overt alcoholic possible, but by screening techniques, it also makes possible the detection of potential alcoholics. By arresting the disease in the early stages, overt alcoholism can be prevented. This effort, given the full support of the medical profession could, with well conducted research and treatment, lead to a great reduction of the incidence of this disease.

Shadel Hospital
7106 35 Avenue S.W.

Clinical Importance of Histoplasmosis

GERALD L. BAUM, M.D.
Cincinnati, Ohio

Infection with Histoplasma capsulatum was first described by Darling in 1905.[10] The disease was a disseminated fatal one which resembled generalized tuberculosis. For forty years histoplasmosis was felt to be a rare uniformly fatal disease of little importance except as a lethal curiosity.[24]

In 1945 Christie observed the association of pulmonary calcifications in tuberculin negative individuals with a positive reaction to a skin test with histoplasmin.[8] This observation was corroborated by extensive skin test surveys in the Ohio-Mississippi River valley,[22, 23] and the enormous incidence of infection with Histoplasma capsulatum in this area was realized. From this stimulus has come our knowledge of the broad clinical spectrum of the disease histoplasmosis.

Epidemiologic studies have clearly shown that the endemic area of this disease in the United States is centered in the Ohio-Mississippi River valley and includes the states of Ohio, Kentucky, Tennessee, southern Iowa, Illinois, Missouri, Indiana, and eastern Kansas.[20, 23] However, focal outbreaks of disease have been noted in many areas outside of this region and sporadic cases have appeared throughout the country.[1, 8, 26] This means that the disease must be considered under certain circumstances by physicians in all parts of the United States though the incidence of the disease in all of its forms is greater in the endemic area.

The organism Histoplasma capsulatum is found in the soil[11] in the endemic area especially. Around chicken coops the soil contamination is extremely heavy.[2] The infection occurs in man by the inhalation of spores of the organism with the development of a primary pulmonary lesion.[2] The organism is biphasic[12] and grows in the soil as a mold which is infectious. In the infected human and animal the organism grows as a yeast and is apparently not contagious by the usual modes of transmission. This has great significance clinically since it means the disease is not contagious man to man or animal to man.

Active histoplasmosis is an unusual clinical entity among children. However, when it is present it may be of extremely serious significance. Since most primary infections occur in pre-adult years (in life long natives of the endemic area)[13] it follows that progressive primary infection should be most commonly seen in children. It has been observed that the

danger of active dissemination of histoplasmosis is greatest in the infant of less than 1 year of age.[1, 31] The risk decreases with increasing age. In the Cincinnati area an average of five to ten children die each year because of disseminated histoplasmosis.

At this point it is necessary to mention that generalized hematogenous dissemination of the organism, Histoplasma capsulatum occurs fairly routinely at the time of primary infection.[4] This can be documented by the high incidence of splenic calcifications seen in residents of the endemic area for histoplasmosis.[29] These calcifications have been shown to be histoplasmic in nature. In addition, positive blood cultures for Histoplasma have been obtained from cases of primary infection which subsequently go on to complete healing.[31] Realizing then that hematogenous dissemination is a very common accompaniment of infection, the generally benign character of this infection is emphasized. Since almost everyone who resides in the endemic area becomes infected and therefore, has hematogenous dissemination of the organism, the low incidence of active clinical disseminated disease speaks very much for this conclusion.

In the child who has experienced either an overwhelming initial dose of Histoplasma (focal outbreaks of the disease) or whose "resistance" is impaired by some unknown cause, active clinical dissemination occurs. The clinical manifestations of this may be acute or protracted. General debility is common, failure to gain weight becomes apparent, anemia and leukopenia gradually develop, intermittent or remittant fever is a common finding. Very striking is the hepatomegaly and splenomegaly which develop almost invariably in cases of this type.[31] Ulceration of the gastrointestinal tract at either end commonly becomes a problem in these children. Anorexia, nausea, vomiting, diarrhea, may all be present alone or in combination. Respiratory symptoms vary from cough and chest pain, to increasing dyspnea. As mentioned the course may be acute or protracted but the end result has previously always been death.

The x-ray findings in this disease in children are those of hepatosplenomegaly[31] and children may show a variety of disseminated destructive lesions in the bones. In addition, very frequently, disseminated pulmonary parenchymal infiltrates with hilar adenopathy may be seen.[4, 31]

Treatment of this disease has, up until recently, been futile but with the advent of amphotericin B® it would appear that an adequate therapeutic tool has finally become available.[6, 19] Studies have shown its unique effectiveness in several fungus diseases including histoplasmosis, North American blastomycosis, cryptococcosis, and coccidioidomycosis.[19] Unfortunately, the drug is relatively insoluble and when given by the intravenous route frequently produces fever, nausea, and chills. These, however, have been shown to be relatively innocuous and do not prevent use of the drug for a prolonged period when it is indicated.

As has been mentioned above, the active disseminated infection in children undoubtedly results from progression of primary infection. Since these primary infections occur almost entirely in the pre-adult period in residents of the endemic area, one has little chance to see active primary disease in adults. However, it has been observed that in "immigrants" to the endemic area from areas in which histoplasmosis is uncommon, one will occasionally see the active clinical, progressive or healing, primary infection.[4] In our experience this type of infection has been a benign one but is indistinguishable from a tuberculous infection of the same degree. This implies awareness of the possibility of histoplasmosis so that the more commonly mentioned tuberculous infection will not be incorrectly assumed to be present.

The clinical appearance of these lesions is in no way unusual. There may or may not be symptoms referable to the pulmonary system. When present these consist of cough, minimal amounts of sputum, and occasionally specific-

From the Clinical Laboratories, Jewish Hospital, and the Laboratory of Mycology, Departments of Dermatology and Pathology, Cincinnati General Hospital, Cincinnati, Ohio.

ally located pleural pain. More frequently the symptoms are those of some weakness, slight weight loss, evening fever, malaise, and generalized aching. Physical examination in these people is frequently normal, but the x-ray reveals single or multiple areas of pulmonary infiltration and associated hilar node enlargement. Occasionally one sees only unilateral or bilateral hilar lymph node enlargement without any apparent pulmonary parenchymal lesion. If at this time blood cultures are done, they may well prove positive for Histoplasma capsulatum. It must be remembered, however, that the organism may take longer to grow under these circumstances than blood cultures are usually kept. So if histoplasmosis is suspected it would be well to advise the laboratory to keep the culture plate for a minimum of thirty days; in addition, it should be sealed. Since these infections are almost always benign, little more than symptomatic therapy has been given in the past. A period of bed rest usually maintained no longer than the persistence of symptoms has proven adequate. Gradual return to work is accomplished often within four to six weeks after the onset of symptoms. Use of amphotericin B in such patients may be advisable, since the threat of active dissemination is always present. This, however, is a matter of individual judgement in each case.

In recent years much publicity has been given to the problem of the so-called "coin lesion" in the lung. The implication of cancer has stimulated an active approach to these lesions and has resulted in resection of many of them. Because of this availability of clinical and pathological material and because of the development of special stains (Gridley,[16] Grocott[17]) the unusual incidence of histoplasmomas has been revealed.[11, 25, 34] In all of the large series of "coin lesions" reported the incidence of granuloma has been in the neighborhood of fifty percent or better. In the endemic area for histoplasmosis it came as no surprise that the largest number of these were apparently caused by Histoplasma capsulatum. However, a somewhat more surprising finding was that in the non-endemic area of histoplasmosis the cause for these "coin lesions" was histoplasmosis in a relatively high incidence.[11] Over the years certain characteristics of the granulomatous lesions have become recognized and now are of value in differentiating granulomatous lesions from malignant ones. This becomes increasingly important because death and disabling sequelae may still follow thoracotomy even though they are considerably less frequent than they were as little as a decade ago. In many instances if the granulomatous lesion can be diagnosed with some degree of certainty, thoracotomy will not be necessary. This is, of course, not invariable, and once again must be individualized.

It has been found that the lesions with concentric calcific densities or with speckled calcific densities are almost certainly granulomatous and very frequently histoplasmic in origin.[30] We have observed two patients who have had a gradual enlargement of such lesions over several years but pathological study showed them to be healed.[4] Therefore, the following facts must be taken into consideration whenever one sees such a lesion, especially in an asymptomatic individual. The age of the patient (carcinoma obviously being more of a consideration in the fifth, sixth and seventh decades), the habits of the patient (smoking to any degree appears to predispose to cancer), presence of calcification, sex of the patient (the incidence of carcinoma being lower in the female than the male), and the geographic area of residence.

Pathologically, these lesions reveal central areas of caseation and/or carnification with concentric areas of fibrosis and often calcification surrounding.[4, 11, 25, 34] Culture of the caseous material is almost uniformly negative, despite the fact that on microscopic section Histoplasma capsulatum may be seen. There has been no clinical evidence in our experience of reactivation or recurrence of histoplasmosis in any case of histoplasmoma either operated or non-operated.

Cavitary lung disease has long been associated almost exclusively with tuberculosis. It has become apparent that cavitary lung disease

is a non-specific entity and its specific cause can be determined by positive cultures only. Histoplasmosis has been observed to mimic tuberculous cavitary lung disease in all of its manifestations.[4, 14] About the only difference that has been observed is that histoplasmic cavitary lung disease produces fewer symptoms of general debility than tuberculous disease of the same degree.[4] In the past patients with cavitary lung disease were treated as tuberculosis even in the face of repeated negative sputum smears and cultures for acid fast bacilli. This negative fact was always ascribed to either lack of facility in the laboratory or some peculiar response of the patient which inhibited the organism from appearing. Undoubtedly many of these patients had histoplasmosis and it behooves all physicians who see such patients with cavitary lung disease to make every effort to recover the etiologic agent so that proper treatment can be started. It would seem apparent that a patient with histoplasmosis does not belong in a tuberculosis sanatorium. In the first place the chemotherapy for tuberculosis would have no effect on the histoplasmosis. In the second place, the patient would not receive the drug which appears to be effective against this type of histoplasmosis; that is amphotericin B.[19] In the third place, residence in a tuberculosis sanatorium for any length of time might result in a second infection with tuberculosis.

Unfortunately the prognosis of untreated cavitary histoplasmosis is not good, in our experience.[4] These patients gradually go down hill and unless some intercurrent incident causes their death, histoplasmosis almost certainly will eventually. This then emphasizes the urgency of making a correct diagnosis and instituting proper therapy. This therapy may include surgery but since great individualization is necessary, no generalities can be made.

It is of clinical interest that occasionally one sees mucocutaneous lesions in adults with cavitary pulmonary histoplasmosis, especially those in the fourth decade and beyond.[3]

The healing of primary histoplasmic lesions, whether occurring during childhood, adolescence, or adult life is commonly attendent with deposition of large amounts of calcium both in the parenchymal foci and in the hilar lymph nodes.[32] This calcium may in itself produce symptoms secondary to pressure. It must be understood that the histoplasmosis itself is inactive, but that the pressure of a large calcified lymph node upon a bronchus may result in bronchiectasis distal to the area of obstruction,[4] collapse of the pulmonary segment involved, or erosion through the bronchus with the development of broncholiths which are then expectorated by the patient.[3, 21] Pressure of such masses may also be noted on large vessels and the syndrome of superior vena cava obstruction secondary to histoplasmic granulation tissue has been observed.[4]

The large size of the calcium deposits in histoplasmic foci has been recognized as a characteristic which has diagnostic significance.[30] In addition, the configuration of the calcification (as previously noted) is also very suggestive of the diagnosis.[30] Concentric calcifications, stippled calcifications, or very large calcifications, almost certainly indicate histoplasmosis as the cause.

Active disseminated disease in the adult is commonly associated with chronic pulmonary disease but may be seen as an isolated clinical syndrome; one of great significance is Addison's disease.[9] In the endemic area destruction of the adrenals by histoplasmosis is undoubtedly the most common infectious cause of the syndrome of Addison's disease. Though the handling of the metabolic abnormalities associated with this syndrome are essentially uninfluenced by the cause of the adrenal failure, the ultimate handling of the patient must include the cause, and it is, therefore, important to recognize histoplasmosis as a potential etiologic agent in such cases. Once again the assumption that Addison's disease means tuberculosis can be very wrong and may lead to unfortunate therapeutic consequences.

The diagnosis of histoplasmosis may be difficult unless one is aware of the clinical manifestations of the disease and its geographic incidence. The most convincing diagnostic pro-

cedure is culture. Unfortunately this may be time consuming and frequently not very successful. The specimens most often submitted consist of sputum or gastric washings or other generally contaminated material and it is necessary to eliminate bacterial contamination by the use of antibiotics. In addition saprophytic fungus contamination is controlled by either extensive plating or passage through animals. In either case the advent of a positive culture may take several weeks which could conceivably fatally delay the onset of therapy. In addition, in many cases of pulmonary disease due to histoplasmosis cultures are only rarely positive. In fact it is only in the cavitary form of the disease or in the case of disseminated lesions that one routinely gets positive cultures from sputum or gastric washings. In the acute primary cases positive cultures from blood occasionally may be obtained.[31] This is more commonly observed in the younger age groups than in the older. In disseminated disease positive cultures from blood, bone marrow, pus, urine, or biopsy specimens may be common.[31] The latter source of positive cultures is to be emphasized. It is our practice that whenever a biopsy for diagnosis is done, part of it is saved, and if histologic examination reveals no carcinoma, the specimen is cultured for routine organisms, acid fast bacilli, and fungi.

The observation of Histoplasma capsulatum by direct mount is a most unusual finding. Smears of sputum are so often negative and the search such a laborious one, that it is our feeling that it is not worthwhile. The presence of the organism intracellularly is observed occasionally in tissue presses made from mucosal lesions.[5] This may be a valuable procedure. By far the most valuable diagnostic procedure in the experience in this hospital is obtaining biopsy specimens stained either with the Gridley or Grocott procedures. It is strongly urged that the diagnosis of fungus disease, particularly histoplasmosis be suspected in any specimen which shows chronic inflammation, particularly of a granulomatous character. Every attempt should be made to demonstrate the causative organism by using above mentioned techniques.

When demonstration of the organism, either by culture or histology is impossible, reliance on skin test and serologic data is of value. A single skin test is a poor index of active infection, however, if one can document conversion of a patient's reaction to the skin antigen from negative to positive, this is prima-facie evidence that active infection exists. Since the skin test for histoplasmosis cross-reacts with the skin tests for blastomycosis and coccidioidomycosis, it is advisable to do all three tests simultaneously to rule out confusion caused by cross-reaction. A number of serologic tests have been developed including the complement-fixation test,[33] the collodion agglutination test,[27] and the latex agglutination test.[28] The most commonly used is the complement-fixation test and is done in the more experienced laboratories making use of two antigens, one being the yeast phase of the organism, and the other being histoplasmin. Unfortunately correlation of positive titers with active disease is not always reliable. Demonstration of a rising titer of complement-fixing antibodies is the only serologic data that invariably indicates active infection. Persistance of high titers has been observed long after the active infection has subsided. Contrariwise negative titers have been observed in cases that are obviously active.[4] In addition, cross-reaction with blastomycosis and coccidioidomycosis is even more of a problem here than with the skin tests,[7] so care must be used in interpreting the final results.

As has been mentioned, the most efficient diagnostic tool is the awareness by the physician that the disease is one which can cause a variety of clinical syndromes. The treatment of the disease is frequently symptomatic only since it is overwhelmingly a benign clinical entity. However, in most cases where active dissemination is either present or suspected, use of the new drug, amphotericin B, is indicated. The toxic effects of this drug, as mentioned, are transient and few and it is a rare case that cannot tolerate the drug with adjustment of dosage and use of aspirin or antihistamines to minimize side reactions.

Summary

1. Histoplasmosis is a disease seen fairly commonly in all age groups in the area of the United States characterized as the Ohio-Mississippi River valley area.

2. Infection with Histoplasma capsulatum is benign in the overwhelming majority of patients, however, in all age groups but particularly in children it may prove to be a fatal generalized infection.

3. In adults, infection with Histoplasma capsulatum may produce disease syndromes indistinguishable from tuberculosis. Therefore, in pulmonary disease particularly every effort should be made to culture the etiologic agent.

4. Disseminated disease in the adult is frequently associated with active pulmonary disease and may produce isolated organ lesions, such as adrenal caseation.

5. Diagnosis of the disease depends mainly on the awareness of its existence by the attending physician.

6. Treatment is rarely necessary, but when indicated is apparently effectively accomplished by the use of amphotericin B.

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Veterans Administration Hospital
3200 Vine Street

CLINI-CLIPPING

Sagittal section through the male pelvis to show urethral fistulae

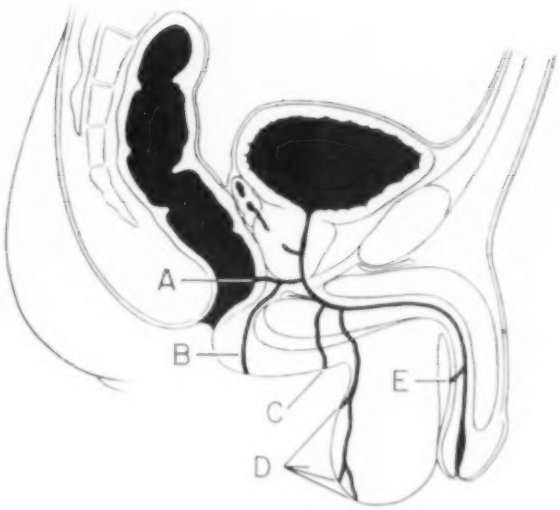
A. Postmembranous Urethra to Rectum

B. Prostatomembranous Urethra to Anal Perineum

C. Bulbus Urethra to Perineum

D. Bulbus Urethra to Scrotum

E. Penile Urethra to Skin of Penis



CONSTIPATION

PETER FISHER, M.D.
Seattle, Washington

"Keep the bowels open!"

This bit of advice has been given to sick and healthy people for centuries by friends, family, and physicians. And in these "modern times" even the salesmen get into the act—frequently over the radio or TV—perhaps even outdoing all others in their attempts to sell laxatives, enemas, special food products, bile and liver constituents, and tonics, often ad nauseam. The physician is probably the most important offender—if not the loudest—for he alone is expected to act on the basis of authoritative information. Unfortunately, this laxative-enema craze does not originate on a basis of sound scientific reasoning. More often, it comes from the physician who just doesn't know quite what else to do or say. More about this later.

Who Started It All?

The use of laxatives and enemas must have started with Adam and Eve—our earliest recorded history makes references to it. Brockbank and Corbett[1] give a good review of this in describing DeGraaf's "Tractatus de Clysteribus"—a lengthy treatise on the origin and description of enemata made up of every conceivable substance (most of which are still used in the hospitals today) and the early ingenious instruments to administer enemata by the patient alone or with help. Much is made throughout of the advantage of enema over purgative—a discussion which has occupied medical writing since Hippocrates. Did you know that enemata may have been in vogue before Adam and Eve—that is, before human beings inhabited the earth? DeGraaf made this description: "No one can pride himself on the discovery of this remedy, since owing to natural instinct we find it in man and beast alike. We know there is in Egypt a bird called the Ibis, not unlike a stork, which first showed us the use of the clyster (literally an injection for cleansing). This creature, conscious of being heavy with a mass of noxious humours, fills its beak with sea water and washes out that part which is the natural outlet for the overloaded belly, making it wholesome."

Pity the Poor Patient

The perpetuation of the bowel myth is multifocal. Every time the patient turns on his television set, listens to the radio, or picks up a newspaper, he is bombarded with statements—indeed warnings—about the danger of missing a bowel movement, having "irregularity," what the "leading doctors say," or how a special product can cure all symptoms by ensuring "proper elimination." Does the physician counteract this dangerous, misleading, and generally erroneous propaganda? Not generally. Usually he is their ally, though often unwittingly. A hospitalized patient barely has his eyes open in the morning before he is questioned by a nurse or attendant about the number, shape, color and consistency of his bowel movements the previous day. If there have

The Physician's Role

been none, there is at least the "We better do something about that" look given the patient. Certainly, the patient must assume that all this is important. The doctor frequently has as his first question "Did you have a bowel movement yesterday?" and leaves with a final remark to the nurse: "If he doesn't have a good movement by noon, give him an enema."

Adding Insult to Injury

Surely we can expect to find help from the latest authorities—the recent books and articles in leading medical journals. Unfortunately, this whole matter is not limited to loose conversation from nonprofessional sources. A leading general therapy text[2] has numerous reference to elimination in non-intestinal disorders in the following way. In discussion of the common cold, "proper elimination" and "prevention of constipation" are discussed as well as the use of cathartics. In epidemic influenza, it is noted that "laxatives are usually unnecessary, for individuals whose bowel habits are regular . . . "; in rheumatic fever "simple laxatives as needed;" in catarrh, etc., "maintain bowel elimination, if necessary using mild cathartics." Please note! All these conditions are of an etiology for which there is no specific treatment—a peculiar coincidence. An article in a recent journal[3] discussed "The Prevention of Cancer, Forty Possible Means." Number thirty-nine on the list states: "Maintain Regular Bowel Habits. Avoid drastics." Is this a known fact in cancer prevention? A very recent issue of the Journal of the American Medical Association[4] had an authoritative editorial discussing the treatment of hepatitis. Daily laxatives or enemas were recommended as a routine measure.



Let's Hear the Facts

The importance of definite change in bowel habit as a sign of possible disease is well known to physicians. But commoner than disease as a

cause of such change are variations in diet, weather, mood, or activity. The importance of preventing fecal impaction in patients who are suddenly at bed rest and being given constipating medicines or diets is certainly real and valid. Nevertheless, it is just as important —and perhaps statistically more important— to be fair and correct with the patient on general problems of elimination as to be thorough in cancer investigation. This alone could possibly release millions of people from apprehension and conversion symptoms based on irritable colon and so-called constipation.

The autointoxication school is dead, as a result of the careful review and honest evaluation by Alvarez.[5] Regularity and daily elimination are positively not vital to good health. Probably, half the population do not have a daily bowel movement. A fair percentage have an elimination of stool once or twice a week only, and feel fine, and are in perfect health. Some people regularly have movements less than weekly. Many, many people normally have total irregularity, permanently, or at intervals of days, weeks or months. Practically all laxatives work by irritation and enemas are not without their dangers. A recent review on irritable bowel syndrome[6] points this out.

Who are the proponents of autointoxication?[7, 8, 9] Without exception, their work is admittedly based on "clinical impressions," with no controlled experimental data. They discuss the role of toxemia from intestinal stagnation as a contributing factor in arthritis, hypertension, hypotension, coronary artery disease, etc., and are obsessed with the importance of "dropped intestines;" "palpable colons" and beneficial effects of enemata in the pathetic constipated patient. A recent lay newspaper article[10] admits the possibility of being normal with bowel movement only every two or three days. Based on the above facts, laxatives and enemata do not seem to be indicated for changes of bowel habits, less than daily elimination, or in diseases of unknown etiology.

What Should the Physician Do About It?

Take time to find out what the patient means. When he says that he's constipated and feels sick, or that he needs an enema or laxative, careful inquiry usually discloses that he means "I don't have daily bowel movements and I think I should." (Admittedly, further investigation takes more time than prescription of a laxative, just as *not* giving penicillin for a cold, with the proper explanation for their decision, takes more time than giving it.) If the patient is asked how long he waited, the answer usually is "I didn't think it was safe to wait over two or three days." If asked how he feels he usually responds that he feels "logish" (wonder where he got that word!), that he gets headaches, etc. There is rarely a patient who says that he feels rectal fulness or pain which we could ascribe to improper expulsion of feces already present in the rectum. As a rule, rectal examination at this time will show that there is no feces to be expelled. A single word of explanation to the patient to help him recognize his normality, often is all that is needed. It is astounding to have the patient reply: "How come no doctor ever told me that before?" "Do you mean I have been worrying unnecessarily all these years?" For patients with a severe, chronic-laxative habit, a program of bowel re-education may be needed using a low residue diet, bulk substances, fecal softeners, and lots of emotional support—but there is almost never need for laxative or enema.

If the physician would replace fancy with fact—show "the bowel myth" for what it is, he would make a tremendous step forward in the relief of human suffering. And it requires only simple honesty and scientific attitude.

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Grosvenor House
500 Wall Street

CHANGES IN MOLES SHOULD NOT BE IGNORED

Moles, "the commonest of all tumors," seldom cause trouble, but one kind needs careful watching because it may produce "the most malignant of all cancer."

This type is junction nevus. It is described in Today's Health (February 1959), by James C. G. Conniff, Upper Montclair, N. J.

Some moles may contain certain cells, called "nevus cells" which may predispose to the development of cancer. A mole with these cells is called "junction" because it rises at the junction of the first and second layers of the skin.

Common moles practically never become malignant, the article said. Moles that turn cancerous almost invariably get their start in junction nevi.

Most junction nevi never turn cancerous either, but they may occasionally do so. If there are changes in a mole—deepening in color, increase in size, or noticeably heightened sensitivity—a doctor should be consulted. If he finds the mole to be a junction nevus, then he should remove it—before it has a chance to become malignant.

"The odds are very much against every human being, even the most freckled, having a junction nevus" the article said. "Hence the anxious examination of one's moles is no more to be encouraged than the hourly taking of one's pulse if all else is well.

"But the grave risk of ignoring any changes in the elevation, shape or color of a mole is not to be encouraged either. Let a physician and his laboratory decide. It might be a junction nevus."

The Differential Diagnosis of

VICTOR GROVER, M.D.
Brooklyn, New York

The differential diagnosis of the cause of dyspnea can not only be difficult but at times impossible. Even the definition of dyspnea is difficult for we deal not only with a sign but also a symptom. Physiologically, dyspnea is apparent whenever accessory muscles of inspiration are being used in the breathing process and/or expiration becomes an active process. Meakin's definition that "Dyspnea is the consciousness of the necessity for increased respiratory effort" is probably one of the best definitions. For the "consciousness" can be that of either the patients or the observer.

Whenever the clinician is called to treat the fifty year-old patient who has awakened at night with an attack of dyspnea, how does he determine the cause or causes so that he may intelligently treat the patient? Often the patient has had some dyspnea and a chronic cough for many years and has been a heavy smoker most of his adult life. On examination he is obviously using his accessory muscles of respiration, and his chest is full of wheezing rales. He also has systolic murmurs at the base of apex of his heart. Does the patient have bronchopneumonia, asthma, cardiac failure, or a combination of these or other conditions? A proper diagnosis is essential for correct treatment, and a differentiation of the causes of dyspnea involves not only a knowledge of disease states, but also a thorough knowledge of the pathophysiology of the common causes of dyspnea.

Space limitations do not permit of a long list of all possible causes of dyspnea, nor a description of the pathologic findings in each disease. Dyspnea lies more in the realm of disturbed physiology. Therefore before proceeding further the physiological concepts in so far as they currently concern the clinician will be reviewed.

Since no mechanism provides for the storage of oxygen in man, he is confronted with the necessity of continuously acquiring it. This review will start with how he does so.

The major divisions of respiratory function are:

(I) Ventilatory — ventilation through the tracheo-bronchial channels;

(II) Respiratory — gas exchange through the alveolar-capillary membranes;

(III) Circulatory — circulation of blood through the pulmonary capillary bed (and gas exchange in the body tissues); and

(IV) Psychogenic—emotional disturbances producing dyspnea.[1, 2]

VENTILATORY: Impaired ability to pass air into and out of the lung. The causes fall into three groups: (1) Obstructive (foreign body, tumor, distorted framework of the chest, infection, asthma, etc.) (2) Reduced distensibility of the lung due to edema, congestion, in-

flammation, fibrosis, etc. or (3) Impairment of respiratory musculature (myasthenia gravis, poliomyelitis, etc.)

RESPIRATORY: The movement of respiratory gases across the various limiting membranes of the body whether they be the membranes of the alveoli or of the various tissue cells. In the lungs the classical examples of respiratory dyspnea are pulmonary edema and the collagen diseases.

CIRCULATORY: Both the volume of the pulmonary blood flow and the quality of the blood may be of importance in the causation of dyspnea. By far the most common type of circulatory dyspnea is that brought about by impairment of the pulmonary circulation. In general, reductions in pulmonary blood flow have their basis in cardiac embarrassment. Although the heart is usually at fault, any condition which seriously impairs the venous return such as oligemic shock would produce similar results.

PSYCHOGENIC: There are a number of forms of respiratory neurosis in which the patient complains of dyspnea. The two most common

Common Causes of Dyspnea

are: (1) the hysterical in which there is severe, continuous, hyperventilation and (2) a type characterized by deep sighing respirations which are single or continuous until the patient can obtain a "satisfactory" respiration.

Thus there are four major clinical divisions of respiratory function. However, there are three other classifications which must be considered.

CHEMICAL: The three chemical factors which are most important to respiratory activity are: the blood content of (1) oxygen and (2) carbon dioxide and (3) the hydrogen ion concentration. These three metabolic stimulants have two possible loci of action. They may act either upon (1) the chemo-receptor mechanisms within the vascular system (principally the aortic body on the aortic arch and the carotid body at the bifurcation of the common carotid artery) or (2) upon the respiratory center directly.

By far, the more sensitive of the two, is that of the respiratory center. It is affected by minor changes in the blood level of carbon dioxide or minor changes in blood pH. However, the sensitive respiratory neurons of the respiratory center have their function impaired or ablated by such influences as anoxia and narcosis. Therefore the chemo-receptor mechanisms are more rugged and have the ability to withstand these factors to a much greater degree. In fact it is the lowering of the oxygen content of the blood which is the usual stimulus to the chemo-receptor mechanisms. These mechanisms then reflexly stimulate the respiratory center to greater activity.

CEREBRAL: The respiratory muscles are innervated through widely separated groups of nerve cells. The function of the respiratory center is to coordinate and integrate this activity. Therefore the many factors which affect cerebral function may also affect the respiratory center. These include such clinically different conditions as encephalitis, hysteria, brain trauma, etc. Each may produce dyspnea by producing changes in cerbrospinal fluid pressure, cerebral circulation and other factors indirectly affecting the respiratory center.

REFLEX: Impulses arising in the periphery of the body can act by reflex pathways for the production of dyspnea. Principally there are three of these reflex pathways; (1) The Hering-Breuer reflex. The stretch receptors of the lungs help control intermittency of breathing. Inflation of the lungs stimulates these stretch re-

ceptors and inspiration is arrested. Expiration then ensues. The resultant deflation of the lungs again stimulates these receptors and arrests expiration. Inspiration is then brought on and the cycle continues. These reflex effects are mediated through the afferent fibers of the pulmonary vagi. (2) Proprioceptors of skeletal muscles and tendons, when stimulated by exercise, reflexly act on the respiratory center probably through the cortex.

Having briefly reviewed the basic fundamentals of respiratory physiology as applied to the lungs we can now report the general changes in disease before proceeding to the more detailed findings. Very frequently the clinician must decide whether dyspnea is "cardiac" or "pulmonary" in origin.

Cardiac Dyspnea

Pulmonary engorgement leading to diminished distensibility of the lung is considered by Meakins, Christie and associates to be the prime cause of cardiac dyspnea. The stiffness of the lung not only requires the expenditure of a greater inspiratory effort, but the elasticity of the lung is also moderately reduced. Expiration instead of being a passive act brought on largely by the elastic recoil of the lung now requires the aid of the expiratory muscles to "squeeze out" the air. The reduced distensibility also increases the sensitivity of the Hering-Breuer reflex with the production of shallow breathing.

Further cardiac failure results in the production of pulmonary edema. Pulmonary edema is the transudation of plasma into the alveoli and its extension by air currents into the passages of the respiratory tract.[3] Pulmonary edema can result from changes in any of the five basic factors or combination of such factors. These basic factors as they affect the pulmonary capillaries are (A) the hydrostatic pressure, (B) the intrathoracic pressure, (C) the protein osmotic pressure of the blood, (D) capillary permeability, and (E) the lymphatic "run off."

The plasma of the lung capillaries has about seven percent protein which produces an effective colloid osmotic pressure amounting to 25 to 30 mm. of Hg. Opposed to this pressure is the normal hydrostatic pressure in the pulmonary capillaries of approximately 10 mm. Hg. and the negative intrathoracic pressure exerted on the capillary walls of minus 5 to minus 10 mm. Hg.

There are several factors which protect the organism against an undue rise in pulmonary capillary pressure. Two of these are: (A) The blood vessels are distensible and elastic. The volume of blood handled can be increased to about twice the average volume before there is any significant rise in pulmonary capillary pressure. (B) The organic changes which occur in the pulmonary arteries in long standing disease raise the pulmonary artery pressure but actually protect the pulmonary capillaries at rest. In pulmonary edema these protective measures are overcome.

Important factors in increasing pulmonary capillary pressure are: (A) Resistance to the outflow of blood as in valvular disease. Since the systemic blood volume is relatively large and the potential volume of the pulmonary vascular system is relatively small, the additional blood forced into the pulmonary vascular system can overdistend it increasing the pressure in both the pulmonary veins as well as the pulmonary arteries. Since intracapillary pressure is also elevated, pulmonary edema can develop rapidly.

(B) In hypoproteinemia, hemo-dilution with saline or rapid hypervolemia if the reserve of the left ventricle is reduced, the output of the right ventricle, in a given period of time, can be great enough to exceed the "run off" capacity of the pulmonary venous tree. The resultant rise in capillary pressure can result in pulmonary edema.

(C) Changes in permeability of the capillary membranes. Whenever the output of the ventricle drops below a certain critical level hormonal changes are then produced in the kidneys, adrenals, etc., which may affect the permeability of the capillary membranes. Other causes of changes in permeability are unknown, but anoxia and certain noxious substances can produce the same effect on the capillaries.

(D) Neurogenic factors occurring with cranial trauma, cerebral hemorrhage, encephalitis, etc., may act by so changing the peripheral and central blood volumes that the blood may be shifted to a vascular bed which has little or no constrictor potential, namely the lung. The increase in volume is sufficient to overdistend the pulmonary capillaries.

The presence of exudate in the alveoli and the edematous swelling of the alveolar walls may adversely affect the absorption of oxygen (a point still under investigation), but causes little or no interference with the elimination of carbon dioxide. This difference is probably due, in part, to the much greater solubility of carbon dioxide than that of oxygen and, in consequence, the freer diffusion of carbon dioxide through the edema fluid. The diffusing capacity of carbon dioxide is twenty times as great as that for oxygen.

Pulmonary Dyspnea

The major function of the lungs is gas exchange, a dynamic process which involves ventilation, diffusion, and pulmonary capillary blood flow.[4] Rapid gas exchange of oxygen and carbon dioxide occurs only in the alveoli and not in the conducting airway. Therefore the primary effect of any disease of the conducting airway of the respiratory tract is its effect on alveolar ventilation. Three factors determine the magnitude of alveolar ventilation: (1) the frequency of breathing, (2) the depth of breathing (tidal volume), and (3) the respiratory dead space (which includes not only the anatomical dead space but also (a) alveoli which have no capillary blood flow and (b) alveoli ventilated in excess of the amount required to arterialize the pulmonary capillary blood flow). The clinician should train himself to think in terms of these three factors of alveolar ventilation and not merely count the frequency of breathing. For it is basically interference with the rapid exchange of oxygen and carbon-dioxide that is the fault in "pulmonary" dyspnea.

The major factors which interfere with normal exchange of oxygen and carbon dioxide are: (A) hypoventilation, (B) hyperventilation, (C) uneven ventilation, (D) changes in the normal alveolar ventilation/blood flow ratio, and (E) interference with normal diffusion of gases from the alveolus to the blood (diffusing capacity).

Hypoventilation may have numerous causes (narcosis, thoracic deformities, poliomyelitis, etc.). It always results in retention of carbon dioxide. When the patient is breathing air there is also anoxemia. However, when he breathes oxygen, there may not be anoxemia, but there is still carbon dioxide retention. For carbon dioxide cannot be eliminated properly without an adequate volume of alveolar ventilation.

Hyperventilation, on the other hand, "blows off" carbon dioxide but adds little to the oxygenation of the blood unless the alveoli were previously hypoventilated. Arterial blood is almost completely saturated with oxygen even during quiet breathing.

Uneven Ventilation: Portions of the lung may not be fully ventilated due to (1) regional obstruction (asthma, foreign bodies, etc.), (2) loss of elasticity (emphysema, cardiac failure, etc.) or (3) loss of muscle power. Uneven ventilation nearly always leads to anoxemia, but does not necessarily lead to carbon dioxide retention. The poorly oxygenated blood from the hypoventilated areas, mixed with the fully oxygenated blood from the normally ventilated or hyperventilated areas, results in a relatively marked lack of oxygen saturation. The carbon dioxide, however, may be sufficiently "blown off" in the well ventilated areas.

Ventilation/Blood Flow Ratio: In order for the blood to be properly oxygenated there must be an adequate ratio of alveolar ventilation to capillary blood flow throughout the lung. Otherwise there will again be a mixture of adequately and inadequately oxygenated blood as in uneven ventilation. Again anoxemia will result from the mixture.

Diffusion Capacity: Even though alveolar ventilation and ventilation/blood flow ratios are normal, anoxemia may still occur if there is an abnormal barrier to the passage of oxygen from the alveolar gas into the pulmonary

capillary blood. Oxygen must pass through (A) the alveolar membrane, (B) interstitial fluid, (C) the capillary membrane, (D) the plasma and (E) into the red blood cell. The movement of oxygen through these tissues occurs solely by a process of diffusion. Any disease of the cardio-pulmonary systems that (A) decreases the number of capillaries in contact with functioning alveoli (pulmonary fibrosis, emphysema, etc.), (B) increases the length of the path (pulmonary edema), (C) thickens the alveolar or capillary membranes (pulmonary fibrosis, pulmonary vascular sclerosis, etc.) or (D) changes the permeability of the tissues (berylliosis) could decrease the diffusing capacity of the lung. The solubility of carbon dioxide is twenty-five times greater than that of oxygen in saline. Therefore the impairment of diffusion of carbon dioxide is rarely a problem except in patients with severe pulmonary insufficiency kept alive by oxygen therapy.

Compensation

The clinician is often puzzled to find that pathologic and clinical pictures frequently bear little relationship to each other.[5] Also a regimen which is successful in treating one patient may be of little value for another patient whose disease is apparently similar. It is the complex of compensations and balances, and the equally complex process of breakdown of these compensatory factors which explains these two common puzzling experiences. A patient with one or more serious pathological conditions may be neither sick nor incapacitated as long as these compensatory mechanisms operate and are sufficient. This explains the relatively short symptomatic history of patients with emphysema or other diseases of obviously long asymptomatic duration. In spite of the pathologic picture, symptoms do not occur until the compensatory factors break down.

Pulmonary function is principally dependent on (A) ventilation through the air channels of the lungs, (B) gas exchange through alveolar capillary membranes, and (C) circulation of blood through the pulmonary capillary bed. Dyspnea may be due to impairment of anyone or combination of these three factors. The method of relief varies with which function is impaired and involves the removal of whichever impairment or impairments exist. For instance (A) Ventilation: In bronchiolar pathology dyspnea may be relieved by elimination of infection, dilatation of the bronchi, and removal of retained secretions; but in (B) gas exchange: alveolar membrane pathology (temporary due to pulmonary edema or permanent due to pulmonary fibrosis) dyspnea can be relieved only by a higher concentration of alveolar oxygen. On the other hand in (C) Circulation: changes in the pulmonary circulation produces a dyspnea similar to that of heart failure and it is necessary to do something to lighten the burden on the right heart (fibrosis, embolization of the pulmonary artery, etc.). Under stresses of many different clinical types the pulmonary vascular pressure may rise to three or four times that of the resting level, which may be more than the chronically strained right ventricle can stand.

In many patients all three situations occur at once and each adds interference to the others. If any one is corrected, improvement is noted but lasting progress may not be made. If therapy is continued for months or even years, inactive areas of the lung may be brought back into function, thereby, not only increasing the number of functioning alveoli and making ventilation more evenly distributed, but also increasing the vascular bed and lowering pulmonary vessel pressures. Possible respiratory reserve is introduced. In the reestablishment of these compensatory mechanisms lie the reasons for improvement in apparently permanent and irreversible damage to the lungs.

Clinical Features in Differential Diagnosis

A good history is most important.[6] An etiological factor for heart disease such as rheumatic fever, or angina pectoris, or a previous allergic factor such as eczema, familial allergies, previous colds, etc., may be of obvious value in helping to reach a diagnosis. Less obvious is the eliciting of a history of numbness and tingling of the lips with giddiness suggesting

hyperventilation. Nocturnal dyspnea under careful questioning may turn into nocturnal hyperventilation due to anxiety. It is also important to differentiate sighing respirations due to nervous tension from true dyspnea.

True nocturnal dyspnea is more suggestive of cardiac dysfunction than of bronchial asthma. Also asthma appearing initially in middle life should be considered as a manifestation of heart failure until proven otherwise.

On the other hand, whenever there is no clinical evidence of coronary, myocardial, hypertensive, or valvular heart disease, one should suspect a pulmonary origin for dyspnea or wheezing. Except for cor pulmonale and constrictive pericarditis the heart is nearly always enlarged when dyspnea is cardiac in origin.

Rales may be cardiac or pulmonary in origin. The wheezing of bronchial and cardiac asthma may be indistinguishable. Each may be aggravated by effort and occur at night. Interstitial pulmonary congestion may be present without rales as may be advanced pulmonary emphysema when it is uncomplicated by other disease processes. When a lesion is in the small bronchi or bronchiole, there is no cough reflex as it is too far away from the major bronchi. Because of the small volume of air passing through these tiny channels there may be neither rales nor wheezes. X-rays of the chest may show shadows indicative of radiating hilar congestion and suggesting cardiac failure with enlargement of the heart or more peripheral lung changes. The response to epinephrine and aminophylline does not differentiate between bronchial and cardiac dyspnea.

At times one must resort to a therapeutic test by a mercurial diuretic, digitalis, salt restriction, etc. A loss of four pounds within twenty-four hours following a mercurial diuretic, in the absence of renal or hepatic disease, suggests congestive failure. This approach is particularly important when heart and lung disease co-exist.

Edema, per se, may be due to many factors especially varicose veins. It must be correlated with distension of the neck, and of other veins, and engorgement of the liver. Pre-sacral edema is often missed in the bed-ridden patient.

A deep systolic venous pulsation is often misinterpreted as an arterial pulsation. Light compression obliterates a venous pulsation without altering the underlying arterial pulsation. Hepatic compression accentuates venous filling and can be a further confirmatory factor in differential diagnosis.

Diastolic gallop rhythm is a frequent finding in the presence of myocardial insufficiency and should be differentiated from the relatively unimportant systolic gallop rhythm. At times it can be better seen or palpated than heard.

Pulsus alternans is another indication of cardiac failure. It is often overlooked since sufficient care is not taken in determining the systolic pressure. Exercise may be necessary to bring out both diastolic gallop rhythm and pulsus alternans.

The finding of pulmonary emphysema frequently complicates the clinical picture.[7] Although emphysema is a common factor in the production of dyspnea, it may be compensated for and be a minor contributory factor rather than the primary cause. Bearing in mind the following thoughts, may help place it in correct proportion. Orthopnea and dyspnea at rest are conspicuously absent in emphysema unless there is concomitant bronchial asthma. In the more severe disease, dyspnea appears especially on arising in the morning. Cough and production of sputum occur only with associated disease. Wheezing with exertion is frequently noted, although frank asthma may be absent. Loss of weight, poor appetite, easy filling with meals, and bloating with increased dyspnea after large meals, is common. The cause is unknown. Classic "barrel chest" may be present or absent. It is frequently associated with the kyphosis of advancing age or vertebral changes in the absence of significant emphysema. Limited excusion of the depressed diaphragms by percussion or preferably by fluoroscopy is a more reliable sign. X-rays at full inspiration may show no abnormality, but comparison in inspiration and expiration are valuable and give more information at an earlier stage. Flattening of the diaphragms in lateral views and demon-

stration of air cysts and variations in radiolucency are valuable findings. Hyperventilation or exercise may produce an expiratory wheeze which comes on suddenly. Pronounced cyanosis suggests a complicating factor for it is rare in uncomplicated emphysema as is secondary polycythemia.

It should not be forgotten that anemia, obesity, thyrotoxicosis, or metabolic acidosis may be the sole cause or aggravating cause or causes of dyspnea.

Laboratory Tests

Mention has already been made of the x-ray and fluoroscopic examinations. The many complex measurements of cardio-pulmonary function are too numerous to describe in detail and are beyond the scope of this paper. These complex tests can be confusing, and are best left to the experts in the cardio-pulmonary laboratory. However, there are a few simpler tests which are of value to the clinician; are easily done, and which should be ordered by him as readily as a chemical determination on blood.

First a word of caution about circulation times and venous pressures. These tests are not usually changed in dyspnea of cardiac origin unless there is also right ventricular failure.

The value of the electrocardiogram rests largely in positive findings. About seventy-five percent of the patients with the angina' syndrome have normal electrocardiograms, and many patients having myocardial infarctions demonstrate no electrocardiographic abnormalities. Much left ventricular hypertrophy can be present and the electrocardiogram can still be normal. Even more so can the right ventricle hypertrophy, especially in acquired heart disease, without demonstrable signs in the electrocardiogram. Therefore a normal electrocardiogram may or may not indicate a normal heart. On the other hand an abnormal electrocardiogram usually indicates heart disease. But the abnormal tracing must be interpreted in the light of the normal range of findings, and not too much weight should be given to minor changes. For instance minor T wave changes may not be significant, but serial T wave changes may be the only indication of myocardial infarction in the tracing. Likewise during the first few years of life, usually one or two, the demonstration of right ventricular hypertrophy may be a normal finding. But in later life it is a fairly reliable indication of disease.

Measurements of vital capacity, and breathing capacity, have been much neglected outside the cardio-pulmonary laboratories. Yet they are simple to do, and yield much information after experience with them has been obtained. Measurement of the "timed vital capacity" (vital capacity during a timed interval) and the "maximum breathing capacity" (amount of air that can be moved in and out of the lungs with maximum voluntary hyperventilation as measured in liters per minute) demonstrate the patient's ability to move air rapidly out of the lung. The test can demonstrate expiratory slowing as well as vital capacity. These measurements both before and after the administration of aerosolized bronchodilators in aerosols, may give more detailed information as to the mechanism of ventilatory impairment. However, they may not correlate quantitatively with the symptomatic response because of compensatory factors. In general, if the measurements return to within normal range after the use of a bronchodilator in an aerosol, it is likely that the patient has asthmatic bronchitis, or bronchial asthma. If significant improvement takes place after the aerosol, but impairment is still present, a diagnosis of diffuse, obstructive emphysema is more likely.

From this review and discussion it can be seen that the entire cardio-pulmonary unit is an adaptive and compensatory mechanism with interrelated factors. Often more than one division is involved. The cardiac in pulmonary edema may require antibiotics for associated pneumonitis, and the asthmatic may have transitory cardiac failure precipitated by infection, requiring treatment of cardiac failure and infection, as well as asthma. By bearing in mind the described pathophysiological changes the differential diagnosis becomes less difficult and the treatment more rational.

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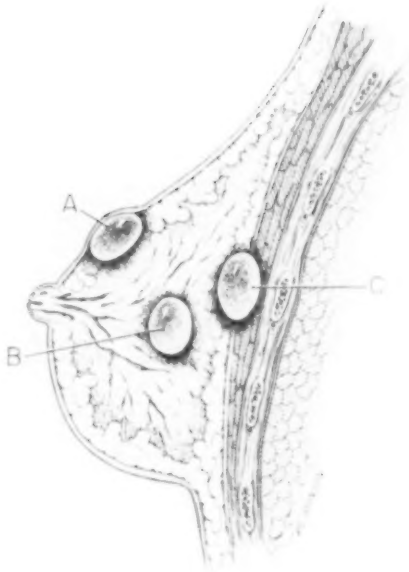
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127 St. John's Place

CLINI-CLIPPING

Sagittal section through mammary gland and classification of abscess according to location.



A. Subcutaneous
B. Intramammary
C. Retromammary

JACKSON MEMORIAL HOSPITAL

Correlation Conference

Conferences are presented weekly at Jackson Memorial Hospital by the faculty of the University of Miami School of Medicine.

PANEL

WINSTON K. SHOREY, M.D.,
Moderator, Associate Dean, Associate Professor of Medicine

JOSEPH H. DAVIS, M.D.,
Medical Examiner of Dade County, Assistant Professor of Legal Medicine

KERMIT GATES, M.D.,
Executive Director, Jackson Memorial Hospital, Assistant Professor of Preventive Medicine

RALPH JONES, JR., M.D.,
Professor and Chairman, Department of Medicine

FRANK T. KURZWEG, M.D.,
Associate Professor of Surgery

ROBERT B. LAWSON, M.D.,
Professor and Chairman, Department of Pediatrics

HOMER F. MARSH, Ph.D.,
Dean, School of Medicine, Professor and Chairman, Department of Bacteriology

DR. SHOREY: Our conference today is somewhat different than usual in that instead of presenting a case we will base our discussion on a small disaster which occurred recently and which resulted in twenty patients being admitted simultaneously to this hospital. In addition to the patients admitted, one woman and one dog were found to be dead on arrival at the hospital. All of these individuals had been poisoned with methyl bromide gas.

All but two of the affected persons were inhabitants of a building physically in contact with a second building which was being fumigated by covering it with a large tent and then introducing the toxic gas. The fumigation process was started on Saturday morning, and by about sunrise the next morning patients began arriving at the hospital. Two police officers who were assisting in evacuating victims were exposed and admitted as patients. Five patients were children.

Symptoms

Symptoms manifested by these individuals can be summarized briefly as follows. Nearly all of them had headache, lightheadedness, and burning of the eyes. Many had dryness of the throat. Three had nausea and vomiting. A

few complained of shortness of breath, and of these, two had x-ray evidence of mild pulmonary edema while rales were heard at the lung bases in two others. A few had minor neurological manifestations, but one woman was semi-comatose on admission, and soon after arrival she had a Jacksonian convulsion. This same individual was oliguric for eighteen hours. After regaining consciousness, she had a severe intention tremor and was totally unable to use her upper extremities in an organized fashion. She has improved greatly, but she still had difficulty in handling a knife and fork. I might add that an electroencephalogram taken on this patient was normal.

Blood bromide determinations were obtained, and only two patients had a significant concentration, each of which was slight (20 to 30 milligrams percent).

Four of the adult patients had abnormal electrocardiograms. The changes in two of these appeared to antedate the exposure to methyl bromide. However, tracings on the other two patients demonstrated progression and reversion of ST-T wave changes suggesting the presence of a myocarditis.

Other laboratory studies including blood counts, urinalyses, carbon dioxide combining power, serum chlorides, and tests on spinal fluid were essentially negative except for a significant proteinuria in one child.

Pathology

Doctor Davis, who is Medical Examiner for Dade County, was intimately involved in this situation, and he performed autopsies on the woman and the dog. I will now turn the microphone over to him to give us the findings of these postmortem examinations.

DR. DAVIS: The pathological findings made at our examinations of the woman and the dog were essentially those of pulmonary edema, and these are the usual ones found in cases of acute poisoning by methyl bromide. In addition, we found evidence of tracheobronchitis in the woman. While a tracheobronchitis may be the result of methyl bromide poisoning, I believe that in this instance the inflammatory reaction of her tracheobronchial tree antedated her exposure to the poison.

I say this having the knowledge that she was confined to her room with a respiratory infection on the day that the fumigation was carried out. Therefore, we feel that the tracheobronchitis contributed to her death by being the cause of a heavy exposure to methyl bromide, but I doubt if it was a part of the pathological picture resulting from the poisoning per see.

Actually, pulmonary edema was the only significant gross finding we made, and nothing of interest was found in the other organs of the body. Gross autopsy findings, of course, do not reflect the fundamental lesions produced by methyl bromide poisoning.

DR. SHOREY: Can you tell us what methyl bromide does to the human body?

Metabolism

DR. DAVIS: It affects certain metabolic functions, but just how this takes place is not well understood. The literature contains articles indicating that methyl bromide was causing trouble as far back as the 1880's. Early articles suggested that methyl bromide is split in the body to form wood alcohol and free bromide. However, subsequent investigation has demonstrated that it is impossible to detect wood alcohol in poisoned individuals. Furthermore, significant concentrations of the bromide ion are not found in most cases.

The basic difficulty appears to be that the methyl bromide itself ties up certain chemical groups and in this way interferes with enzymatic processes. The final chapter on the effects of methyl bromide on metabolism is yet to be written.

DR. LAWSON: What about the renal lesion? The only child who had any symptoms at all was the daughter of the woman who died. This girl was quite groggy and out of contact on admission and was ataxic for about 24 hours.

She had as much as 600 milligrams percent of protein in her urine at first, but this gradually cleared over a 10-day period.

Also it was stated that one of the adult pa-

tients was oliguric. Can you explain these indications of kidney involvement?

DR. DAVIS: I am not familiar with the effects of methyl bromide on the kidney. The kidneys of the woman we autopsied did not reveal any gross lesion. We may learn something about the microscopic sections.

DR. SHOREY: Dr. Jones, do you have anything to add in regard to the toxic effects of methyl bromide?

DR. JONES: For an agent which is so widely used and is such a potential source of danger to the public, the pathogenesis of the phenomena which it produces is very poorly defined. Interesting concepts about its action have been advanced, but these are more theoretical than factual. Dr. Davis has already mentioned the concept of methyl bromide splitting up into methyl alcohol and bromide ion and stated the objections to this.

One theory takes into account a property of methyl bromide which makes this material an excellent fumigant, that is its tremendous ability to penetrate almost anything. This includes the cell wall. According to this unsupported theory, methyl bromide carries the the bromide ion into the cell where it is never allowed to be normally. Bromide might then be released by hydrolysis within the cell, acting there as a toxic agent. This process of hydrolysis might also liberate free methyl groups, and if these were oxidized they would proceed through the usual degradation ending up as formic acid.

Research

Another possibility in pathogenesis has not been adequately explored, but is suggested by the biochemical literature describing in vitro systems in which methyl bromide is used as an agent to knock out DPN linked reactions. Methyl bromide has the ability to add to some free amino groups, particularly to the amino groups in ring structure. If it were to add to the ring nitrogen of the nicotinic acid coenzymes, converting the tertiary nitrogen to a quaternary nitrogen, co-enzyme one and coenzyme two would be inactivated. This theory looks beautiful, and it is amazing that no solid work has been done to further elucidate it.

The clinical manifestations are suggestive in some respects of what one might see in acute deprivation of nicotinic acid coenzymes. They are remarkably parallel to those produced by the very potent nicotinic acid antagonists which have been developed as cancer chemotherapeutic agents. The most potent nicotinic acid antagonist used in cancer chemotherapy produces in experimental animals the neurological picture of ataxia and convulsions. These animals may suddenly die, and this sudden death is associated with pulmonary edema.

There may be a clue in this unrelated research to direct us toward the pathogenesis of methyl bromide poisoning.

DR. SHOREY: I believe there is one thing that we can say for sure. Testing of the blood for bromide is no way to diagnose methyl bromide toxicity.

DR. JONES: I agree it is not. On the other hand, if elevated blood bromide levels are obtained by the test of sodium bromide in individuals exposed to methyl bromide, it indicates that they have had a very heavy exposure. I believe the test is of value from that respect.

DR. SHOREY: Dr. Davis, can you give us further information as to how this accident took place. What was the arrangement of the involved buildings?

Penetrating

DR. DAVIS: The walls of these buildings were physically in contact with each other. One building was built in 1938, and its wall was right on the property line. Later the other building was constructed snug against it. Thus, generally speaking, two layers of concrete blocks separated the two.

However, at one place where a lavatory window had existed in the first building only the concrete wall of the second building separated them.

Furthermore, the layer of concrete blocks at the top of the opening left by this old window were laid in such manner that the holes within the blocks made a direct communication

between the two buildings. As you may or may not know, concrete blocks are usually laid so that the holes within them go up and down. However, blocks forming the top layer are frequently laid on their sides to prevent concrete from running down inside the wall.

The methyl bromide gas went from one building to the other by way of this old window. The direct communication through the holes in the concrete blocks was one factor, and another is that one layer of concrete blocks is insufficient to contain methyl bromide. As Dr. Jones has already pointed out, this material is highly penetrating, and it can diffuse through the porosity of concrete.

DR. SHOREY: Dr. Jones will you comment on the therapy of methyl bromide poisoning?

DR. JONES: The first procedure in management is, of course, to get the patient out of the methyl bromide atmosphere. One should bear in mind that in addition to the possibility of immediate death as occurred in one of these individuals, experience indicates that delayed toxicity may occur. Individuals, who appear quite well soon after exposure, may suddenly die 36 to 48 hours after exposure. Pulmonary edema is the usual cause, and this has been said to result from chemical irritation of the lungs. However, there is no evidence to support this, and it certainly could be explained just as well by an acute cardiac arrhythmia or some other acute change in the heart.

Furthermore, two of these patients manifested electrocardiographic evidence of something abnormal occurring within the myocardium. The plan of management, therefore, must take into account the possibility of this delayed complication.

Specific details of treatment must be determined by the condition of each individual patient. Marked vomiting, of course, requires attention to fluids and electrolytes. Recurrent convulsions are handled with the cautious use of sedatives bearing in mind that the patient is already in a depressed state. A general anesthetic is occasionally required to control convulsions. If pulmonary edema occurs, the usual procedures are instituted to control it.

Treatment

The most urgent requirement in managing these patients is hour to hour observation for the development of any untoward reaction.

DR. LAWSON: I thought these patients were given BAL. Is this indicated?

DR. JONES: An editorial appeared in one of the British medical journals which stated that BAL has been reported as being of value in the treatment of methyl bromide poisoning. However, we have not been able to come up with any definite information to support this statement. Do you have any information in regard to this, Dr. Gates?

DR. GATES: No, I have no further knowledge on the use of BAL. However, there are two other items in treatment which, while minor, I believe should be mentioned. The first is actually a matter of preventive therapy, namely the police officers who were admitted as patients should have worn gas masks when they entered the building to assist the victims. The second is the prompt removal of clothes of individuals exposed to methyl bromide. I understand that sufficient gas is absorbed in a victim's clothing that if his clothes are not promptly removed, further absorption of gas into the body will occur. Our house staff was very prompt in carrying out this specific procedure.

DR. LAWSON: I would like to ask Dr. Jones his opinion of using intravenous sodium chloride in these patients for the purpose of displacing bromide ion with chloride ion.

DR. JONES: Therapy with intravenous saline solution had already been started when I arrived on the ward. I stopped this treatment because I did not feel it was indicated, and I feared it might do harm. While displacement of bromide ion by chloride ion is of value in treating inorganic bromide poisoning, these patients had no significant amount of bromide ion in the extracellular fluid. Furthermore, the principal threat to life in these patients was the development of pulmonary edema, and in some instances oliguria was present. Under these circumstances I believe it is incorrect to introduce salt into the body.

DR. LAWSON: I believe this situation points up a general principle which is worthy of emphasis. In any emergency one should not feel compelled to do something just to satisfy the desire to help a victim. If no definite indication for carrying out a procedure is present, it is better to wait a little while and find out exactly what should be done. Any procedure carried out should have good evidence for its use. Not infrequently a therapeutic measure administered because it might do some good and probably will do no harm actually does do harm.

DR. SHOREY: Do you have any comments in regard to therapy, Dr. Davis?

DR. DAVIS: Since this accident occurred, I have done a little reading on the matter. My only comment is in regard to the use of BAL. I believe the only evidence favoring its use in this situation rests on a study in which mice were exposed to methyl bromide and then treated with BAL. The BAL-treated mice appeared to do better than the non-treated animals. Actually, I do not think that treatment with BAL is a good idea. The major complaint of our police officers, who were so treated, was that they could not sit down. BAL also gives other unpleasant side effects.

DR. JONES: I agree with Dr. Davis. We were confused in attempting to evaluate on a clinical basis the degree of each patient's exposure to methyl bromide because of similarity between side effects of BAL and symptoms of methyl bromide poisoning. This was particularly true as regards headache. Another factor which caused difficulty in evaluating symptoms was the fact that many of these people had attended a rather prolonged party on that particular Saturday night. Headaches and conjunctival injection had still another etiological possibility.

Management

DR. SHOREY: If there are no further comments on this particular accident, I believe it would be appropriate to get into a discussion regarding principles in managing disasters in general. This topic is too broad to attempt coverage of all of the various disasters which might occur. The major possibilities in this area include hurricanes, floods, fire, and a plane crash in the middle of the city. With a SAC base immediately south of us and a major airport within the city limits we are a potential target for a nuclear weapon. In other parts of the country, tornadoes have caused major disasters. In 1953, within a brief period of time, tornadoes hit Waco, Texas; Flint, Michigan; and Worcester, Massachusetts. These specific incidents have received considerable attention in the literature, and lessons in disaster management have been learned from them.

Taking care of large numbers of individuals all suffering at the same time certainly is a different situation than taking care of an individual patient who may have injured himself. In order to care for large numbers of casualties, a high degree of organization must be achieved. To obtain such organization, one must have plans ahead of time predicting and anticipating such occurrences.

Disaster Plan

Dr. Gates, will you open this phase of our discussion by telling us about existing plans for disaster in this hospital?

DR. GATES: To begin with, any accredited hospital is required to have a plan for the reception and care of mass casualties. In most hospitals, the number one plan is the fire plan. I feel that this hospital has a very excellent plan for fire which is in the hands of the City Fire Department and also at each nursing station. This is one plan on which we have dry runs. Unfortunately due to the pressure of day to day affairs, other disaster plans are only on paper and are not rehearsed with any regularity.

We have a disaster plan which has been prepared primarily from the point of view of being ready for a hurricane. It also takes into consideration other possible disasters, such as Dr. Shorey mentioned, but I have been concerned that it does not point these up sufficiently.

It is a very simple plan which among other things requires that each chief of service assign

a representative who will direct the activities of that service during the emergency. With the advent of the medical school, the Associate Dean and the Deputy Director of the Hospital coordinate the activities of the various services. The Associate Dean is also responsible for making use of medical students as he sees fit.

Other portions of the plan direct how space within the hospital will be used, provide for sending certain patients home in order to provide space for casualties, and give directions for providing protection from flying objects.

One of our major concerns is the care of the pregnant women of the community during and immediately after a hurricane. As part of our plan, any woman more than seven months pregnant may be housed within the hospital upon recommendation of her physician.

We also provide for housing the dependents of our staff who are within the hospital during a hurricane.

DR. SHOREY: In making provision for a hurricane, we have the advantage of a warning system which gives us time to get ready for it. On the other hand, many disasters, for instance the Worcester tornado which caused 100 deaths and 1500 injuries, hit without warning. Is it possible to plan for disasters such as this, Dr. Gates?

DR. GATES: I think it is possible to plan, but sometimes plans go astray. One of the criticisms of the Worcester disaster is that all of the victims arrived at one hospital creating such a traffic problem that people could get neither in nor out of the hospital. We hope to overcome such a problem as this by the presence of radio communication in the hospital police station. By this radio communication, the police will route casualties to areas that can take care of them.

DR. SHOREY: Does the Jackson Hospital have an emergency water supply?

DR. GATES: Unfortunately, we do not. Our plan calls for filling all bath tubs and certain reservoirs if we have warning. Arrangements have been made with the Miami City Water Department for furnishing water if any is available. In regard to electricity, we are fortunate enough to have diesel powered electric generators which in an emergency can supply essential needs.

MEND Program

DR. SHOREY: Another aspect of disaster planning is of concern to us, and in this instance we are thinking primarily of the results of an enemy bombing attack on this area. What happens to our medical school if it is partially destroyed? Of course, if we are completely wiped out there is no problem, but if we should be only crippled what plans are in effect for making use of surviving medical school personnel and for the continuation of medical education. Dr. Marsh?

DR. MARSH: I am sorry to say that many places in the United States, in fact most of them, have taken the complacent attitude that nothing is going to happen so why make any particular plans for this type of emergency. On the other hand, over the past several years plans have been developing for the meeting of such an emergency.

For as long as ten years, the Armed Services have attempted to interest medical schools in developing programs for indoctrinating students in the handling of mass casualties and meeting emergency situations. Little was accomplished until about four years ago when, through the auspices of all the Armed Services and the Public Health Service, a program evolved which had structure and also held out incentive to the medical schools to do something about the problem. Fifteen of the medical schools in this country entered into this program, which is known as the MEND Program or Medical Education for National Defense, during its first two years. Subsequently, each year since its founding, ten new schools have been added to the program, and this next year our own medical school becomes a part of this effort.

The sponsoring services provide funds which assist the medical schools in carrying out the program, and a national coordinator directs the effort in an organized fashion. However, there is no set formula that a medical school must follow, each school developing its own program

along the lines best suited to it.

Each school has its MEND coordinator who takes upon himself the responsibility of introducing into his school methods of transmitting to the students an attitude toward and the techniques of handling mass casualty situations. Dr. Lloyd Newhouser, who is Director of the Blood Bank and who has had a great deal of experience in this type of activity, has been appointed as our MEND coordinator.

Drill

Schools already in the MEND Program have developed various means of getting across the concepts desired. One of the more interesting programs is that at Baylor University where there is a very close liaison with Civil Defense. A simultated disaster was staged in which an explosion and fire occurred in the town of Beaumont, some ninety miles away. The medical students from Baylor transported their equipment to Beaumont to handle the large number of simulated casualties. This demonstration involved tremendous activity in stockpiling medical and surgical supplies and in coordinating personnel to get the job accomplished efficiently. This was carried out as a joint effort between Civil Defense and the MEND Program.

Another aspect of our planning, already mentioned by Dr. Shorey, is that of continuing medical education in the face of disaster. We can anticipate that a bombing attack would kill a certain percentage of our physicians making it even more urgent that our medical students continue with their training. To accomplish this, two lines of planning must be considered. If sufficient faculty and students survive, it may be possible to establish facilities in this area itself outside the so-called ground zero. On the other hand, there might be such widespread destruction that nothing could be continued in this area.

In consequence, this means provision must be made in other medical schools so that our surviving students and faculty members can be sent to those schools to pick up and continue the medical education process. In addition, we must make provision in our own school for possible expansion and assimilation of personnel from some other medical school that might be destroyed. Now this sounds very good. Actually, we have done nothing definitive about it and few medical schools have. It is something to which we must direct our attention.

Trauma

DR. SHOREY: Much of our discussion on the broad aspects of disaster planning has pointed out the problems that exist rather than producing satisfying solutions to them. The opening discussion centered about an emergency primarily medical in nature. I am sure it is obvious that the immediate clinical problems resulting from most of the disasters which have been mentioned would be surgical rather than medical in nature. Dr. Kurzweg, will you comment upon the handling of mass trauma?

DR. KURZWEG: While it is true that in a mass casualty situation the majority of lesions will be those ordinarily managed by a surgeon, the number of patients will be such that insufficient surgeons will be available to handle each as is desirable in ordinary practice.

Every attempt would have to be made to increase personnel, making use of all attending staff, house staff, medical students, nurses, and technicians. In order to make efficient use of the personnel available, it would be divided into teams with a person of experience directing individuals with less experience. Certain teams would be in the operating rooms while others would be on what is equivalent to hospital wards and in the emergency room.

One team would be made up of the more expert personnel and would have the job of seeing and sorting all victims brought to the hospital. In a situation where more casualties are present than the existing personnel and facilities can accommodate, one of the most important functions is that of sorting patients and deciding which should be treated and which are beyond help. Limited supplies of blood, plasma expanders, and other supplies should not be used on individuals who have

no chance of surviving when they can be used to save less severely injured persons.

DR. SHOREY: Does anyone have other comments in this regard?

DR. GATES: I believe we should take note that a national policy has changed from what it was in the past. The old adage was "save the women and children first." However, skilled personnel now are considered a premium because by saving them first additional people will be saved.

The matter of identification of victims, although appearing trivial, is very important. Public relations, the control of mass hysteria, and efficient handling of individuals are greatly enhanced by knowing who the victims are and the condition they are in.

I would stress adequate communications in any disaster plan. One should not depend upon a single channel for communications as the one relied upon may not work.

DR. LAWSON: If we had to expand our hospital, just where would the beds come from?

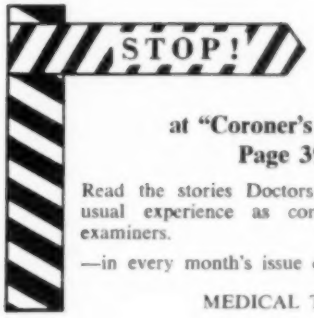
DR. GATES: Our disaster plan calls for taking over the nursing home as a hospital facility.

DR. LAWSON: I mean where would the beds themselves come from? Is there a stockpile of them along with other material?

DR. GATES: Actually, of course, we have the beds that are in the nurses' rooms. We do have 80 additional beds that are stockpiled in this hospital.

In addition, this hospital has given Civil Defense some 200 beds that have been moved to their central area.

DR. SHOREY: There are many other aspects of this subject which have not been discussed, but I am afraid our time is up.



at "Coroner's Corner"
Page 39a

Read the stories Doctors write of their unusual experience as coroners and medical examiners.

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MEDICAL TIMES

EDITORIALS

PERRIN H. LONG, M.D.



MEDICINE UNDER THE STATE

IV. THE BRITISH NATIONAL HEALTH SERVICE: Drugs, Pharmacists, and Pharmaceutical Manufacturers; Hospitals, Health Centers, Group Practice and Private Practice

One of the important things to remember about the National Health Service in Britain is that it has turned out to be considerably more expensive than anyone expected it to be. In the estimates for the current fiscal year, the cost of the Service was put at roughly two billion and seventy-two million dollars ($2,072,000,000).[1] This figure will be between three and four percent of Britain's gross national product. In 1956-57, eighty percent of the cost of the National Health Service was raised by taxation. As practically everyone is taxed in Britain, this shows very definitely that the Service is not "free," and to some degree this taxation serves as a brake to certain unnecessary demands on the Service.

One aspect of the Service has been of increasing concern to both the Government and the public since its beginning. This is the drug bill. This has risen by almost one hundred percent since the inception of the Service, and this despite the fact that the first fourteen cents of prescription charges have been borne by the patients for several years. Even allowing for the inflation which has taken place during the past ten years, a considerable percentage of the increased cost is due to the rising proportion of "proprietary" (brand-name) drugs which are being prescribed, and to the fact that over ninety percent of pharmaceutical research in Britain is done, and paid for, by the manufacturers.

The Ministry of Health has attempted to stem the rising cost of drugs by attempting to get the manufacturers to place reasonable

(in the eyes of the Ministry) prices upon medicaments, while at the same time facilitating research, and stimulating vigorously the drug export trade; and by all reasonable methods to try to educate physicians in the Service to pay attention to the costs of drugs when prescribing. Recently in an interim report the Hinchliffe Committee (appointed to study this problem by the Ministry of Health) has recommended that the pharmaceutical manufacturers "be legally bound to state the retail price of products they advertise to doctors.[1] Be this as it may, one has to recognize that while the cost of the drug bill has increased, there is little doubt that the use of many of the modern and expensive drugs has decreased hospital costs, because many illnesses formerly treated in hospital can now be treated in the home, and with other disease the duration of stay in hospital has been markedly shortened.

In retrospect, it is clear that because drugs are supplied by organizations which are designed and of necessity have to make a profit, it is the pharmaceutical companies which come first in the minds of Ministry officials and investigating Committees when ways for reducing the drug bill are being sought. This point should not be lost on pharmaceutical manufacturers in our own country, because certainly under a national health scheme here, their companies would soon be under governmental scrutiny and possibly regulation.

The pharmacist in Great Britain has been faced with a considerable burden since the inception of the Health Service.[2] It is estimated that the increase in prescriptions from 1947 to 1949 amounted to more than one hundred million. Today eighteen thousand pharmacists in fifteen thousand pharmacies dispense about two hundred and thirty-five million prescriptions (including five million private prescriptions) per year. About thirty percent of the average pharmacy's gross income is currently derived from National Health Service payments.

With the development of the Health Service, two major events occurred which helped to cement good relations between the medical and pharmacy professions to a degree never achieved before. First, the dispensing doctor disappeared, except in isolated rural areas, and the requests by the lay public to the pharmacist to recommend a "remedy" markedly decreased.

From the point of view of costs to the Service, the average cost of a prescription has risen from roughly twenty-three cents in 1947 to eighty-four cents in 1958. However, as has been pointed out, in 1958 the average prescription cost one dollar and ninety-six cents in Canada and two dollars and eighty cents in the United States.[2] It is believed that as the British Formulary is quite widely used by physicians, this practice has helped keep down the costs of prescriptions. On the other hand, there seems to be little doubt that the introduction of "proprietary" (brand-name) products has been a factor in increasing the price of prescriptions. All in all, it appears that the work of the pharmacist has become standardized because of the use of "proprietary" and formulary preparations.

Another interesting facet of the Health Service is that the relations between the pharmacist and the Ministry is a contractual one, while local administration is in the hands of locally elected professional committees. Terms and conditions of service are negotiated by a top-level contracting committee sponsored by the British National Pharmaceutical Unions. While crises have arisen, there have been no breakdowns during negotiations. However, it has become increasingly clear that the Government is delving more and more into the costs of individual businesses in order to satisfy the Public Accounts Committee of the House of Commons. Then, too, early in the Service a scheme was set up to test the accuracy of dispensing. Few inaccuracies have turned up, and the pharmacists feel that Government should not be a part of such an undertaking, but rather it should be left in the hands of the Pharmaceutical Society. These two items should be of

1. Guillebrand, C. W. The Times Supplement, p. V, July 7, 1958.
2. Linstead, Sir Hugh, Ibid., p. XVIII.

concern to pharmacists in this country when National Health Service and other bills of a similar type are being discussed before Congress.

In conclusion, it can be said without doubt that the pharmacists have done a top-flight job for the National Health Service. There has been a serious shortage of hospital pharmacists, and this group has never received the recognition which it deserves for the work which it does. Actually today there is a staffing crisis as far as hospital pharmacists are concerned in England which, as has been shown, "requires more than a reassessment of salaries for its cure."

As has been pointed out by T. H. Manners Kerfoot, President of the Association of British Pharmaceutical Industry, "For the pharmaceutical industry, the great social experiment begun in 1948 has provided a period of achievement and reorientation."[3] Its major problem has been that of facing the fact that the State and not the public was by far the largest customer in the domestic market. This might seem good to have an assured market, without having to think about the customer's reaction to the price of medicaments which were supplied to him. However, the manufacturer finds himself in a very competitive market in which there is but one major buyer and a pretty canny one at that. This buyer is also one who at any time can castigate, investigate, or regulate the industry with impunity. It is important to note that under these conditions the wholesale price index of drugs and pharmaceuticals in Great Britain has only increased by six percent since the inception of the Health Service.[4]

Another problem faced by the industry and which has been mentioned before is the problem of putting the efforts which it has made to produce new drugs into the proper economic perspective. The steadily rising cost of the drug bill under the Service can easily be seen by any Minister. However, the economic benefits which are derived in the Service from the use of the new drugs are much harder to see, when one is preparing new estimates or reviewing old costs. Kerfoot points out, in relation to possible savings, that "many are quite intangible; others, though they cannot unfortunately be accurately estimated, are more obvious. For example, it costs no less than three pounds (eight dollars and forty cents) a day to maintain a patient in hospital, an average stay costs no less than thirty pounds (eighty-four dollars). If the expenditure of another thirty shillings on drugs will get the patient out of the hospital a day sooner, or if an extra five pounds (fourteen dollars) will keep him out of hospital, the direct saving is considerable. To this must be added the saving in sickness benefits." Thus one can see a major preoccupation on the part of doctors, pharmacists, pharmaceutical manufacturers, and of various Ministries over the past ten years has been the cost of medication. It is easy to see what a problem to all concerned this would be, if a National Health Service Act were enacted in this country.

It was noted earlier that some five million private prescriptions were now being filled each year in Great Britain. The fact that the demand for medical attention from a private doctor, either general practitioner or consultant, persists is not often discussed.[4] Indeed, one of the paradoxes of the National Health Service is the fact that from 1948 to 1958 the number of individuals holding privately purchased "health insurance" increased tenfold from eighty-four thousand to eight hundred and thirty-four thousand.[5] Just what does this imply and why is it happening? As pointed out by A. N. Dixon,[5] the reasons for this remarkable increase in privately purchased insurance in face of a National Health Service stems from a desire to have:

"1. Privacy—an absolute requirement, even more marked with women than with men.

2. The opportunity to secure non-urgent 'in-patient' treatment at a convenient time of personal choice, and, as soon as circumstances permit, to engage in business correspondence and see visitors without restrictions. Statistics

3. Kerfoot, T. H. M. Ibid., p. VI.
4. "Correspondent," Ibid., p. XXI.
5. Dixon, A. N. Ibid., p. XXI.

showed that the great bulk of non-urgent treatment falls within this non-urgent category.

3. The confidence engendered by personal selection of the medical attendant.

4. The employer (who sponsors the group scheme) has found the efficiency of an employee is diminished while waiting for treatment either for himself or for a dependent—hence the employer's interest as a matter of welfare."

Currently, about seven hundred general practitioners, most of whom are in cities, engage solely in private practice. In addition, any general practitioner in the Health Service can treat patients privately if they are not on his Health Service list of patients. Almost all of the consultants or specialists, even if they are listed as being full-time, engage in some consulting work.

The survival of private practice in Great Britain is primarily dependent on the availability of hospital beds for private patients outside of the National Health Service hospitals. There are plenty of doctors, but the threat is that the State at some time in the future for doctrinaire or other reasons might not provide private-treatment accommodations which would be needed for the support of private practice. Under such conditions, unless nursing homes with high operational standards could be provided, the private practice of medicine would indeed be seriously undermined, and might disappear. However, if private beds are available in Service hospitals, "the prospect of medicine as a State monopoly is remote."[5]

Under the provisions of the National Health Service Act, the voluntary, teaching, municipal, and county hospitals of Great Britain were appropriated on July 1, 1948, by the Government and were placed under the jurisdiction of the Minister of Health. The ministry, in turn, handed over the non-teaching hospitals to appointed regional boards, on an agency basis, for planning and management. The teaching hospitals were returned to the management of their original boards of governors.

It is in the area of the hospitals that the least progress has been made under the National Health Service. Apparently, little sound planning of the costs, or of the development, of a long-range hospital rehabilitation and replacement program was made in advance of the inauguration of the Service. In the past ten years the money which had been made available (and this has been inadequate) had to be spent for structural rehabilitation and modernization of existing structures. While in the United States, Scandinavia, Switzerland, France, and Germany an "epidemic" of hospital building has taken place, there has been relatively a small amount of money spent in Great Britain for hospital construction. Currently, about $17,000,000 is being spent annually for this purpose, and the major project in this area of the last ten years, the surgical building at Guy's Hospital in London, will reach completion this year.

Along with the low rate of hospital construction, regional hospital boards and boards of governors have had to cope with the problem of developing increasing income which will permit them to plan and to keep abreast of the advances being made in scientific medicine. In these attempts they have been hard hit, and as has been pointed out by Sir Harry Platt, President of the Royal College of Surgeons,[6] "we have been compelled to contemplate another long period of practicing twentieth-century medicine in nineteenth-century structures. None the less, it *is* twentieth-century medicine, and despite our physical handicaps, British medicine so far retains a position of leadership. But a sense of frustration prolonged indefinitely must in the end handicap progress by limiting the freedom to experiment which is the lifeblood of medical science." He further goes on to propose that "we therefore face what to me is an inescapable conclusion: that for their special requirements in the future, the hospitals must not only be set free but must be encouraged to seek additional sources of finance outside the central governmental budgets of the National Health Service. For the teaching hospitals this would be a welcome return to old

6. Platt, Sir Harry, Brit. Med. J. 2 Suppl. 5, July 5, 1958.

7. Dain, H. Guy, Ibid. 2 Suppl. 1, July 5, 1958.

practices and in keeping with their long heritage." This statement by Sir Harry is most revealing because it indicates that it is his belief that adequate government financing of new hospital construction will not or cannot be provided by the central government, and indicates possibly that a modern economy cannot afford a first-class Welfare State.

In the planning phase of the National Health Service, much publicity and fanfare was given by its proponents to a major premise in the plan, namely the Health Centers in which the general practitioners would group themselves for the practice of preventive and curative medicine. Unfortunately, since the Service became effective (and that is but ten years ago) little has been done by the Government in this area. Among the explanations given are: "the high cost of some of the earlier buildings, and . . . the administrative complexity of the services they have to house."[7] By this matter is meant the difficulties of linking up the general practitioners with the public-health authorities. Essentially what has been done in the area of the Health Centers has been done primarily on an unofficial, experimental basis by private philanthropy (Nuffield Provincial Hospital Trust). When one considers the extravagant predictions made relative to the role and importance of the Health Centers prior to, and with the inception of the Service, the fact that they are still in the experimental stage after ten years can be counted as one of the major failures in the concept of the National Health Service.

As opposed to what was happening in the United States, little in the way of "group practice" or "clinics" existed in Great Britain prior to the inception of the National Health Service. Then, due to the exigencies of the Service, partnerships among practitioners became desirable, and every year has seen an increase of privately built centers for group practice. During the past five years it has been made possible for practitioners to obtain interest-free loans for the construction of these group-practice centers. About four hundred thousand dollars a year is now available for such loans. In a number of instances the general practitioners share these centers with their public-health colleagues, thus achieving voluntarily and privately what the Service has appeared to be unable to bring about officially. Indeed it can and has been said, "The case for group practice and for bringing together the G.P.'s, the local health and authority services, and the dentists has been proved. Cooperation is best when each side retains autonomy in its own part of the common premises. Developments would be quicker if . . . a neutral, benign landlord could serve all parties. Failing this, whether the local authorities or the G.P.'s are the actual owners, success depends on personal good will and mutual help for the benefit of the patient, with neither party seeking dominion over the other." This statement may well give part of the answer of why the Health Centers had not been developed as originally planned. The practitioners and the public-health physician were jockeying for position and power. This can well stand as a lesson in this country, because, should the National Health Bill, or the Fogarty Bill pass, the Department of H.E.W. would assume a dominant position in their administration, and the Public Health Service would probably become the operating agency.





THE LONG AND SHORT OF IT

From Your Editor's Reading

Your Peripatetic Editor

In February, I attended the Congress on Medical Education and Licensure in Chicago. Saturday, February 7, was devoted to meetings of the Federation of State Medical Examiners of the United States and was opened by Dr. Stiles D. Ezell, Secretary, New York Board of Examiners, who made a few remarks on the general subject of examinations for licensing. This whole day was devoted to Institute discussions of state-board examinations in physiology and preventive medicine in the morning, and biochemistry and internal medicine which were jointly discussed by Dr. Philip Cohen of the University of Wisconsin Medical School and Dr. James A. Campbell, Professor of Medicine, the University of Illinois College of Medicine, in the afternoon. Your Editor spent most of his time in the Institute on examinations in biochemistry and internal medicine. The main subject discussed in this Institute (and I might add in meetings such as this the various speakers wander all over the map) had to do with what type of questions should be asked candidates who are taking state-board examinations. One factor under discussion was whether one should ask the question from the point of view of the applied scientist, i.e. doctors (and most candidates fall in this group) or whether it should be asked from the point of view of the Basic Sciences. This discussion occupied quite a bit of time and, as far as I could make out, no resolution of the problem was accomplished during the afternoon. There were also discussions about the real need in this country for better reciprocity and less red tape in licensing, and for some system of endorsement or licensing which would permit distinguished foreign physicians to emigrate to this country or foreign physicians from well known English-speaking medical schools to be licensed in the United States without so much trouble as is frequently the case. It might be said that there was no real agreement about any aspects of this point although I feel that everyone in attendance felt, deep in their hearts, that a graduate of Oxford, or Cambridge, or Guy's Hospital Medical School, or the University of Liverpool School of Medicine, in fact any of the current British schools, should be admitted to examination in the same way one would admit to examination a graduate of the University of Manitoba or of the McGill University Medical Schools. The stumbling block here is that no one is really interested in setting up a system of inspection and approval and that "States-rights" still prevail.

On Sunday morning, February 8, there were a number of talks on "Specialism in Medicine." I must say that it was difficult for me, when I finished listening to all the speakers, to winnow out the wheat from the chaff, because all seemed to agree that "Specialism" is here to stay, that we will have to make the best of it, that specialists should be as broadly educated

as possible so that they don't get too wrapped up in their narrow field, and that, probably, from the overall point of view "Specialism" was a good thing. I must say that programs of this type always leave me somewhat cold, because they are frequently so repetitive in content. On Sunday afternoon there were various workshops, and I participated on the one on "The Residency Program" which was held under the chairmanship of Dr. Wright Adams of the University of Chicago School of Medicine. The following questions were presented as a suggested agenda as possible areas around which this workshop conference might be initiated:

1. What are the present major objectives common to all graduate clinical education and training?

2. Are these objectives what they should be to best meet the present and anticipated needs of the public and of the young physician in terms of medical service, research, and education?

3. Are present programs designed to achieve most effectively these proper objectives? If not, what changes are necessary, and how can they be brought about?

4. What are the purposes of measuring residency programs? How should this measurement be done, and what yardsticks should be used?

6. How can the values of program evaluation be conserved while making provision for the differing interests and abilities of individual residents.

7. In establishing appropriate objectives and methods of attaining them for graduate clinical education and training, what roles should be fulfilled by:

a. Medical school faculties?

b. Specialty boards?

c. The profession at large?

I might say that I had to leave early because I had to get a plane for Columbia, South Carolina but, when I left, after the conference had been in session for over an hour and one-half no one had been able to decide what major objectives are common to all graduate clinical education and training. As the discussions developed in the conference, it seemed impossible to get the conferees to differentiate between major objectives in hospitals in which the required teaching of undergraduate medical students is carried out from those in hospitals in which there is no medical school teaching, but which have approved intern and residency training programs. As too often happens, the discussion got off on problems of salary, of marriage of house staff, of hours of work, and as always, of the good old days and of the bad new ones. Then too a number of topics which were tangental to the subject at hand were discussed. This did not permit the group to come to real grips with the problems of residency training. Possibly, after I left, the conference did reach certain agreements, and, if it did, these findings will be published in the *Journal of the American Medical Association* at a proper time.

As a result of having to stay on the ground for well over an hour in the Chattanooga airport because of weather, I missed my 10:45 p.m. connection in Atlanta, Georgia to Columbia, South Carolina and so had to spend the night there. I could not get out the next day until after 1 p.m. so in the morning I decided to go out to Grady Hospital which I had not visited since I had been there with Dr. James Paullin some eighteen years ago. The new Grady Hospital is an extremely well built, well arranged, and interesting institution. I had an opportunity while I was there to chat with the interns and residents, and I was amazed to find out that according to what they told me, they had an adequate nursing service in the Hospital, both registered, practical, and student, and there were no shortages in supplies, or equipment, and, in the opinion of the house staff, there were enough interns and residents. To me, who is confronted constantly with problems related to a shortage of nurses, of supplies, and of equipment in the Kings County Hospital, New York City, this seemed like heaven, and I was just amazed. At the hospital, I met Dr. Hurst, Dr. Carter Smith, and Dr. Edward Evans (a former student of mine

at Hopkins) and I made rounds with the latter, seeing a very interesting instance of infectious hepatitis in a young man of twenty-one years whose wife came down with the disease at the same time that he did. Despite most careful questioning, one could not find out the possible sources of the infection although both of them must have become infected at the same time. After a very enjoyable morning I flew on to Columbia, South Carolina where I rushed to the Veterans Hospital to talk on the subject of "Overweight" following which I attended a most enjoyable gathering (devoted to the production of overweight) where I met Drs. L. J. Brannon, Thomas Pitts, George Peeples, Allen Josey, William Weston, Jr., James Green, and many others, and after that to dinner, and to talk on the "Use and Misuse of Antibiotics" before a very good audience, the members of which asked many questions. When this occurs it is fun for the speaker.

The next morning I flew into Charleston where I got in touch with Dr. Vince Mosley and then I went out to the Medical College of South Carolina Hospital, which is a new, modern institution, to see him. He took me all over the new building which I greatly enjoyed because of its many new features. I was able to pick up quite a few new ideas about equipment and arrangements. After going through most of the Hospital with Dr. Mosley, I went over to Roper Hospital and spent over an hour in this magnificent old teaching institution, seeing a young, Negro woman who had early sarcoidosis, complicated by a severe anemia, with Dr. Smythe and the house staff. After a good lunch, at which I met Kenneth Lynch, I spent the afternoon in touring the old section of Charleston in a horse-drawn open Victoria with a most fascinating guide and driver whose name is Mr. Wagner, and who I can recommend to all who ever visit Charleston as an individual who can really show you the old section of the town and its beautiful houses. I must say that without any question that the old section of Charleston, with its houses and gardens, is the most beautiful spot, from the point of view of fascinating old houses and gardens, that I have visited in this country. There is nothing like it anywhere in New England, New York City, or Philadelphia. Even, to my way of thinking, the older areas of New Orleans are not at all as interesting and beautiful as those of Charleston. Frankly, I had never realized what a fascinating place Charleston is. I would recommend that if one wants to visit Charleston, to go there during the second, third, or fourth week-ends in March when the gardens are in full bloom, and many of these stately houses and plantation homes are open to the public.

The next morning I walked around the seawall by the Fort Sumpter Hotel (which is the place to stay) and the temperature was 80°. What a day for February! About noon I flew out for Huntington, West Virginia where I was met by George Lyon, now manager of the Veterans Administration Hospital there, and was whisked to a lovely party given by Dr. Oscar Biern and his nephew Samuel Biern and their charming wives, at which I met many of the doctors of Huntington, West Virginia. Such an affair is always very pleasant and stimulating. The next day I spent the morning on ward rounds on the Medical Service at the Veterans Administration Hospital at Huntington and in the afternoon with Dr. Bradley on Surgical rounds. Late in the afternoon, I gave the second Paul Hawley lecture on Military Medicine using the "Natural History of Hepatitis" as my subject. That evening, after a very nice initial social gathering, I spoke before the Cabell County Medical Society in Huntington again on my favorite topic, "The Use and Misuse of Antibiotics." Again I was pleased because there were so many questions. In all it was a very pleasant and instructive week.

Differences Between Smokers and Nonsmokers

"Two hundred fifty-two selected college men, first studied in 1938 to 1942 and followed by interview and questionnaire since that time, have served as subjects for an investigation of possible differences in personality and physiology

between smokers and nonsmokers. The collection of data on smoking was a part of a much larger collection of information from the subjects and was never stressed. After observation of individual smoking habits over the years, a division of men as to smoking habits was as follows: 61 nonsmokers (24.2%), 95 moderate smokers (37.7%), and 96 heavier smokers (38.1%).

A comparison of the case records of the five heaviest smokers (two or more packages of cigarettes daily) with those of five nonsmokers chosen at random showed marked contrasts in personalities. The smokers showed great energy, restlessness, seeking for danger, and a kind of independence which keeps them actively engaged in some enterprise which appeals, and they had difficulties with marriage. The nonsmokers were steady, dependable, and hard workers with stable marriages and histories of specialized, noncombat war duties, and they led rather quiet progressive lives.

Such differences were statistically borne out for the whole group when comparisons were made with certain personality traits that had already been categorized and with other data which distinguish persons from one another. The nonsmokers, as a group, possess the more stable qualities of dependability and good direction of aims in life, although they are somewhat on the bland uncommunicative side. The group of smokers appears to contain more of the men who are energetic, searching for aims and purposes, verbal, variable, and perhaps, although less stable, more interesting. The nonsmokers tended to major in natural sciences, particularly physics and chemistry, while in college; the smokers tended to choose majors in social studies and arts and letters. The nonsmokers tended to enter scientific careers; the smokers, careers in social relations, education, and writing. Moderate smokers were represented predominantly in business and medicine. The nonsmokers expressed preference for the career of scientific research worker but dislike for careers such as sales manager, farmer, corporation lawyer. The heavier smokers expressed few preferences but did like the career of judge, disliking that of scientific research worker. In World War II nonsmokers were listed significantly in branches of the Navy, heavier smokers, in the Army. Better adjustment to the armed services was shown by nonsmokers and moderate smokers. Heavier smokers were in excess among the men who had combat duty. There is slight evidence—not conclusive—from a study of psychotype that nonsmokers tend toward cerebrotonia, moderate smokers toward somatotonia, and heavier smokers toward viscerotonia. Nonsmokers answered a questionnaire more promptly than did others.

The comparison of smoking habits with a wide variety of physiologic and medical data, such as physical fitness, height, weight, number of colds, pulse, blood pressure, and symptoms accompanying stressful experiences, gave largely negative results. Certain findings, however, are noteworthy. There is a strong tendency for nonsmokers to be slow breathers and for heavier smokers to be rapid breathers. This was checked by pneumograph taken at the time of the basal metabolism. Rapid breathing is related to small tidal air and suggests the need for occasional deep breaths (as inhaling cigarettes). Heavier smokers sigh more frequently and swallow more frequently when there is a rubber mouthpiece. Relationships of these respiratory phenomena with personality traits suggest constellations of traits and physiologic factors with smoking habits.

Knee, ankle, biceps, and abdominal reflexes show trends which suggest that they may differentiate smokers as a class from nonsmokers. The reflexes of smokers tend to be reduced. Such reflexes also have suggestive relations with traits and respiratory rates, thus adding to the above-mentioned constellations.

Other findings are that the heavier smokers indulge more in alcohol and in coffee than do the nonsmokers; the moderate smokers tend to gain more weight during the years, the heavier smokers to lose weight; the nonsmokers have few body moles, although this may have been due to chance distribution, despite a value of $P=0.01$. In this study an attempt was made

to cross check whenever possible with similar data (for example, respiratory rate at the time of the medical examination and at the time of basal metabolism, respiratory rates with tidal air, and different kinds of reflexes). This was not possible with skin moles. The characteristics which seem to differentiate smokers from nonsmokers (for simplicity omitting the MS category) may be summarized as in Table II: Contrasting Characteristics of Nonsmokers and Heavier Smokers:

NONSMOKERS
Bland affect
Inarticulate
Well-integrated
Physical sciences
Most stable personality
Major in college: natural sciences
Careers: chemistry, physics
Like: science research worker
Dislike: sales manager
Psychotype: cerebrotonia
Answer questionnaires promptly
Armed Service: Navy; well-adjusted noncombat duty
Respiratory rate: slow
Sighs and swallows: diminished
Reflexes: increased
Less alcohol and coffee

HEAVIER SMOKERS
Cultural
Lack of purpose and values
Less well-integrated
Practical organizing
Less stable personality
Major in college: social studies, arts and letters
Careers: social relations, education
Dislike: science research worker
Like: judge
Psychotype: viscerotonia
Delay answering questionnaires
Armed Service: Army, less well-adjusted, combat duty
Respiratory rate: rapid
Sighs and swallows: increased
Reflexes: decreased
More alcohol and coffee

There seems to be little doubt that this group of men can be differentiated as to smoking habits by certain personality traits and physiologic criteria. Although the subjects show a wide geographic and socio-economic distribution and in many ways have divergent personalities and physiques, they are nevertheless restricted to a segment of college men of a certain age and in some respects to an intellectual class. For this class it seems that, by definition, since the men were selected as 'normal,' it is 'normal' to smoke or not to smoke as the case may be. It is not to be expected that findings could be exactly duplicated in another segment of society. The results, however, suggest strongly that smoking is more than a superficial habit overlayed indiscriminately upon a group of men but has some origins at least in personality and physiologic characteristics. Such characteristics may have just as much right to a place in the etiology of disease as the tobacco smoke ingestion itself. To prove such a point, of course, further investigation is required."

CLARK W. HEATH
A.M.A. Arch. of Int. Med. (1958) Vol. 101, No. 2, Pp. 386-8.

Lupoid Hepatitis and the Hepatic Lesions of Systemic Lupus Erythematosus

"14 cases of lupoid hepatitis (active chronic hepatitis with a positive L. E.-cell test) are described. The clinical, biochemical, and pathological features were predominantly those of severe progressive hepatitis. Minor systemic manifestations occurred in 8 cases.

Histological examination of the liver in 19 cases of systemic lupus erythematosus showed normal tissue or non-significant changes in 6 and minor changes (portal fibrosis and cellularity) in 11 cases; only 2 cases had typical chronic hepatitis.

Lupoid hepatitis and lupus erythematosus may be distinguished as separate entities by the clinical findings and pathological changes; but

the occurrence of overlapping features in the two groups suggest a similar pathogenesis, possibly mediated via abnormal immunological responsiveness with auto-destruction of host tissues. Lupoid hepatitis may represent a specific example of a fundamental disease process which we term autoclasia-"self-breaking-down."

IAN R. MACKAY, M.D., L. I. TAFT, M.B., D. C. COWLING, M.D.
The Lancet, Vol. 1, No. 7063, P. 68-69, Jan. 10, 1959.

Acute Meprobamate Poisoning

"It can be seen that alarming quantities of meprobamate can be ingested with good prognosis, but serious symptoms may occur. Patients have consumed anywhere from 10 to 40 gms. of this drug and recovered. Symptoms varied from sleepiness through stupor and coma to complete respiratory and circulatory collapse. In most cases, coma, areflexia and lowered blood pressure occurred. The pulse became rapid in most of these but was slowed to 40 per minute in 1. One patient was cyanotic, and another had slightly cyanotic lips. Four had pinpoint and 2 had dilated, fixed pupils.

The treatment depended, of course, on the symptoms. Gastrict lavage on occasion recovered a considerable part of the ingested drug, and an oral airway was inserted in several patients to ensure unobstructed respiration. Tracheal aspiration relieved respiratory embarrassment in 1 case. The central-nervous-system stimulants used reflected a wide choice. Dextroamphetamine sulfate, amphetamine sulfate, caffeine sodium benzoate, pentylenetetrazol, picrotoxin and coffee were given. Cerebral electro-stimulation was used in the near fatal case of Allen and Black. Charet et al. state that picrotoxin is a safe, efficient antidote. Actually, the prognosis has been good notwithstanding the choice or use of analeptics.

The hypotension often encountered in meprobamate poisoning has been treated with intravenous infusion fluids and vasopressor substances such as phenylephrine and levarterenol bitartrate. Lockhart has warned against the dangers of overhydration in these patients, because of their flaccid state. Oxygen was used in most cases to prevent cerebral anoxia."

LEON W. POWELL, JR., M.D., GEOFFREY T. MANN, M.D., and SIDNEY KAYE, Ph.D.
The New England Journal of Medicine (1958) Vol. 259, No. 15, P. 718.

Chronic Penicillin Urticaria from Dairy Products Proved by Penicillinase Cures

"Traces of penicillin contaminating dairy products have previously been suspected but never *proved* as a cause of allergic reactions. Proof of allergenicity of penicillin in dairy products in four patients is based on the following evidence: (a) Patients had previous allergic reactions to penicillin. (b) This previously known penicillin allergic reaction was duplicated repeatedly after ingestion of dairy products. (c) The reaction cleared rapidly after injection of penicillinase—a penicillin-destroying enzyme with no effect on anything but penicillin. (d) The patients could eat dairy products without subsequent allergic reaction if given a prophylactic injection of penicillinase first.

Even more stringent efforts should be made to eliminate penicillin contamination of American milk. (The 1957 estimate was that 11% of milk samples are contaminated with measurable amounts of penicillin.)

Patients with chronic urticaria where penicillin sensitivity is suspected should be given a test injection of penicillinase. If urticaria clears for four to seven days, penicillin sensitivity was probably the cause.

Patients with chronic urticaria, where penicillin sensitivity is proved or suspected, should have dairy products, ice cream, and Roquefort or bleu cheeses containing Penicillium species molds eliminated from their diets.

If patients have a flare-up four to seven days after a penicillinase injection, there is residual penicillin in the system which has not been destroyed. Penicillinase injections should be repeated at four- to seven-day intervals, as necessary, to stop symptoms.

If more than eight days pass before a new outbreak of allergic symptoms after an injec-

tion of penicillinase, then the penicillinase had destroyed all the penicillin in the system at that time. The new outbreak suggests that the patient either has had a new exposure to penicillin or that his new reaction is due to some other allergen."

MURRAY C. ZIMMERMAN
A.M.A. Arch. of Dermatology (1958) Vol. 79, No. 1, Pp. 5-6.

The Effect of Penicillin on Acute Rheumatic Fever and Valvular Heart Disease

"In a controlled study of 97 patients with acute rheumatic fever, six weeks of intensive penicillin therapy appeared to have no effect upon the acute clinical, laboratory and electrocardiographic manifestations, but did appear to produce a reduction of probable statistical significance in the incidence of valvular heart disease a year later. The disparity between the effects on the acute-phase manifestations and those on the endocardial lesions suggests that these may differ pathogenetically. The results indicate that the living streptococcus continues to play a significant part in the development of valvular heart disease even after symptoms of rheumatic fever have appeared.

It is concluded that an intensive course of penicillin may be important in the therapy of acute rheumatic fever for its effect on valvular heart disease. In addition, symptomatic therapy must be administered to control acute symptoms."

E. A. MORTIMER, JR., M.D., S. VAISMAN B., M.D., A. VIGNAU I., M.D., J. GUASCH L., M.D., A. SCHUSTER C., M.D., L. RAKITA, M.D., R. M. KRAUSE, M.D., R. ROBERTS, A.B., and C. H. RAMMELKAMP, JR., M.D.
The New England Journal of Medicine (1959) Vol. 260, No. 3, P. 111.

Electrocardiographic Changes in Acute Subendocardial Infarction

"From a series of 182 cases in which acute subendocardial infarcts were present, 30 were selected for intensive study. The availability of appropriate electrocardiographic evidence and the absence of complicating lesions that might confuse the interpretation of such evidence were principal factors determining the selection.

The findings in 11 of these 30 selected cases are presented here. The remaining 19 will constitute a portion of another report.

Five cases included in the present account made up the category of large subendocardial infarcts of circumferential or nearly circumferential extent. Electrocardiographic findings in these 5 cases consistently conformed with that pattern postulated for acute subendocardial lesions on the basis of theoretic considerations, experimental evidence, and the clinical findings included in certain earlier accounts. Low-amplitude R waves were present in precordial leads V_1 to V_4; these waves were completely lost in 1 case. Preinfarction electrocardiograms were available in 3 of the 5 cases. Comparison of records before and after infarction revealed actual loss of amplitude in R waves from the 4 precordial points just noted, associated with the appearance of S waves in V_5 and V_6. Q deflections appeared in only 1 case; these deflections were 1 mm. deep and were present in leads V_2 and V_3. Depression of the S-T segment in at least the left precordial leads was present in all instances, ranging from 2 to 7 mm. Elevation of this segment in lead a V_R was also present in the 4 cases in which this lead was recorded. Although some peculiarities of QRS and segmental configuration occurred in standard limb leads and extremital leads other than aV_R, these changes were of lesser degree than in the precordial leads and varied in nature and in distribution from case to case.

In contrast to the electrocardiographic findings in these 5 cases of large acute subendocardial infarcts were those encountered in the 6 cases of large acute nontransmural infarcts. The changes in these cases generally were similar to those that would be anticipated as a consequence of acute transmural infarcts of similar distribution.

This evidence suggests that the change from a subendocardial to a transmural type of electrocardiographic pattern occurs when an in-

farct involves somewhat more than the inner half of the thickness of the ventricular wall."

RODERICK W. COOK, M.D., JESSE E. EDWARDS, M.D., and RAYMOND D. PRUITT, M.D.
Circulation (1958)
Vol. XVIII, No. 4, Part One, P. 610-11.

Electrocardiographic Changes in Acute Subendocardial Infarction

"1. The electrocardiographic findings have been presented in 19 cases of acute subendocardial infarcts of small or moderate size, and in 5 additional cases of anteroseptal infarcts in which electrocardiograms were recorded at a time when other clinical data indicated the lesion was acute.

2. Three types of electrocardiographic change related to the acute phase of the infarction were encountered most commonly. These were: (a) depression of the RS-T segments in all precordial or in the left precordial leads, (b) deeply inverted T waves in some or all of the precordial leads, and (c) diminished height of R waves sometimes associated with appearance of small Q waves in certain precordial leads.

3. Because QRS changes are of so limited an extent and RS-T segment and T-wave changes afford no specific indication of myocardial infarction as contrasted with subnecrotic myocardial injury or myocardial ischemia, the electrocardiographic delineation of subendocardial infarction is commonly inferential as to the fact of occurrence and nebulous as regards extent and configuration of the lesion."

RODERICK W. COOK, M.D., JESSE E. EDWARDS, M.D., and RAYMOND D. PRUITT, M.D.
Circulation (1958)
Vol. XVIII, No. 4, Part One, P. 622.

Amebiasis of the Liver Diagnosis, Prognosis, and Treatment

"The most common complications of intestinal amebiasis are amebic hepatitis and abscesses of the liver. In the present series, liver involvement was found in 3 percent of the cases with intestinal amebiasis.

Hepatic amebiasis usually affects the male sex. Alcoholism and malnutrition do not seem to have any significant role. A history of dysentery and presence of E. histolytica in the stools are found in about one-fourth of the cases. The most frequent location of amebic liver abscess is the right lobe near the dome.

Amebic lesions of the liver can be classified into three groups: acute hepatitis, acute liver abscess, and chronic liver abscess.

Acute amebic hepatitis is characterized by its benign clinical course, with a minimal of laboratory and x-ray abnormalities, and by its rapid response to treatment.

Pain in the hepatic area, fever, and enlargement of the liver are the main symptoms in both acute and chronic liver abscesses. Leukocytosis and neutrophilia are commonly found. Elevation and immobility of right diaphragm are the most important x-ray signs. Pleuropulmonary complications, weight loss, low serum albumin, and anemia are more frequent in the chronic cases.

Hepatic amebiasis can be confused with other febrile diseases, with other liver disorders, with pleuropulmonary diseases, and with acute and chronic abdominal conditions.

The most frequent complications of hepatic amebiasis are secondary infection of the abscess, pleuropulmonary involvement, and rupture of the abscess into the peritoneal cavity.

In our group of cases, the mortality was 16 percent. The more common cause of death was peritonitis following leakage of an abscess into the peritoneum. Pleural and pulmonary complications were also frequent causes of death.

Emetine and chloroquine are two valuable drugs for treatment of hepatic amebiasis. The drug of choice is chloroquine because (a) the therapeutic effect is at least equal to that of emetine; (b) the toxicity is minimal; and (c) it can be taken by mouth.

The simultaneous administration of emetine and chloroquine does not appear to improve the therapeutic result of either one of the two drugs.

Drainage and puncture of the abscess are the two procedures for surgical treatment. Both have definite indications and should always be used in combination with drug treatment. A puncture and aspiration of the abscess is indicated when it has not subsided with medical treatment and there are no signs of secondary infection.

Surgical drainage of the abscess is indicated in (a) secondary infection; (b) danger of rupture into the pleural or peritoneal cavity; and (c) large, walled-in or anfractuous abscesses."

BERNARDO SEPULVEDA, M.D., HORACIO JINICH, M.D., FRANCISCO BASSOLS, M.D., and RAFAEL MUNOZ, M.D.
Digestive Diseases (1959) Vol. 4, No. 1, P. 62-63.

Loafer's Heart

"Statistical evidence and experimental observations suggest that lack of physical exercise contributes to the development of degenerative cardiac changes, possibly also to that of coronary atherosclerosis.

The underlying mechanism seems to consist of a deterioration of cholinergic vagal counterregulatory effectiveness against the injurious influence of uninhibited sympathetic-adrenergic activity upon myocardial oxygen economy and myocardial mechanical efficiency.

Avoidance of effort, a traditionally dominant goal of Western civilization, entails far-reaching social and emotional consequences that are reflected in neurovegetative functional patterns with adverse cardiovascular implications."

W. RAAB
A.M.A. Arch. of Int. Med. (1958) Vol. 101, No. 2, P. 197.

The Anemia of Renal Failure

"Although anemia is a constant complication of renal failure, the mechanism of its development is obscure. That the degree correlates with the degree of azotema has been suggested but this relationship has such wide variation that it is of little significance in the individual case. It is evident that anemia is, itself, a manifestation of renal failure, irrespective of the type of underlying renal disease.

In a situation where anemia is such a constant finding, it is interesting that it cannot be attributed to a single defect, but rather results from several pathogenic mechanisms. That there is a hemolytic element has been suggested by several workers, and in the present series of patients this defect was a very common one. By comparing the survival of donor cells with auto-transfused blood, it could be demonstrated that an 'extracorpuscular' factor was responsible for the hemolysis. The tendency toward abnormal fragility of the red cells suggests that this factor has had some effect, direct or indirect, on the red cells prior to hemolysis.

The degree of abnormality noted in these patients cannot be explained by a distorted age distribution of the red cell population. Evidence has been cited in the past to suggest that these fragile cells are the result of a hemolytic mechanism. The in vitro 'storage lesion' is associated with increased mechanical fragility and is reversible when the cell is reintroduced into a normal environment. Studies recently reported suggest that in uremia there is a red cell defect of similar nature with a diminished reserve of high-energy phosphate, and the increased fragility may be reflecting this chemical defect. Such a situation in vivo may well be associated with shortened red cell survival, since the integrity of the red cell depends on glycolysis.

Hemolysis of the degree noted in most of these patients is a nonspecific manifestation of disease and has been described in infection, malignancy, arthritis, and lymphoma. However, the ferrokinetic studies demonstrate the presence of an erythropoietic defect in these patients of a degree not found in other chronic disease. The observations here demonstrate that this marrow insufficiency is unrelated to severity of renal disease, type of disease, or degree of azotemia.

One can only postulate the basis for this until methods are available for quantitating erythropoietin in such cases. However, the fact that Jacobson has found a source for this marrow stimulant to be the kidney may have some

bearing. Recent work by Erslev demonstrates that uremic rabbits not only fail to respond to erythropoietic stimulus to a normal degree but also have a diminished level of activity in their plasma. The lack of effect of N.P.N. in depressing marrow reported by this same investigator is consistent with the clinical evidence that this criterion of renal failure is not closely related to any of the pathogenic mechanisms found in these patients. However, with the evidence at hand, it is as yet impossible to determine whether the kidney is responsible indirectly by failing to excrete a toxic product or directly by failing to produce an erythropoietic substance. It is not unlikely that both play some part."

JANE F. DESFORGES and JEAN P. DAWSON
A.M.A. Arch. of Int. Med. (1958)
Vol. 101, No. 2, 331-32.

The Effectiveness of Long-Term Treatment of Malignant Hypertension

"A survey is reported of the courses of 84 patients who presented the syndrome of malignant hypertension and who have been under treatment with potent antihypertensive drugs.

Among these, 70 percent survived 1 year of observation, 50 percent 3 years, 33 percent 5 years, and 26 percent 6 years. These survival rates represent substantial therapeutic gains over survival rates in the untreated series of Keith, Wagener, and Barker.

The reported first-year survival rate is weighted by the untoward complication of hexamethonium pneumonitis, and current survival is greater than in the estimate presented.

Other causes of death are (1) rapidly or (2) delayed or slowly progressive renal failure and (3) complications of atherosclerosis. The first is usually associated with poor control of blood pressure. It seems merely an attenuation of the usual course of malignant hypertension. The syndrome of delayed or slowly progressive renal failure is associated with diffuse occlusive fibrous intimal hyperplasia of major renal arteries. Among the complications of atherosclerosis, cerebral hemorrhage was the most common and was associated with poor control of blood pressure level, while myocardial infarction, the next most common, was not. It may be that the coronary arteries, like the renal, are subject to progressive occlusive disease in some patients with treated malignant hypertension. It is not clear whether this process represents a continuation in vessels larger than arterioles, of a basic vascular disease or a delayed response on the part of the arteries to preexisting severe hypertension.

Survival is improved in patients who undertake treatment before malignant hypertension has caused extensive vascular damage. Patients who present themselves for treatment with evidences of severe renal damage generally do not survive for long periods. However, several such have maintained active lives for many months and years. Hence treatment should be withheld only in the most desperate circumstances."

HARRIET P. DUSTAN, M.D., ROLAND E. SCHNECKLOTH, M.D., A. C. CORCORAN, M.D.
Circulation (1958)
Vol. XVIII, No. 4, Part One, P. 650.

Carcinoma of the Stomach

"1. Six hundred and thirty-seven patients with cancer of the stomach appeared in the Massachusetts General Hospital from January 1, 1947 to January 1, 1957. Of these patients 24 percent of the total number had palliative resections with a mortality of 24 percent, and 43 percent had resections for cure, with a mortality of 8.7 percent.

2. During the same period, the mortality of resections for cure was as follows: subtotal distal resection, 8.2 percent; of subtotal proximal resection, 7.0 percent; of total gastrectomy, 14.5 percent, and of extended total gastrectomy, 15.4 percent.

3. During the period January 1, 1947 to January 1, 1953, 380 patients were admitted. There were 49 who survived five years, of whom 7 are known to have died later of cancer. The overall five-year survival rate was 12.9 percent.

4. The five-year survival rate was 49 percent for those patients who had a distal subtotal gastrectomy and survived operation, 14 percent with proximal gastrectomy, 11 percent with total gastrectomy and 18 percent with extended total gastrectomy.

5. Factors that have affected this improvement in results included: a) earlier diagnosis, particular attention being paid to those patients with supposedly benign ulcers, polyps, or pernicious anemia, b) an increased number of operations, and c) more radical resections, particularly for cancer involving other organs by direct extension.

6. The most important factor in prognosis is the nature of the tumor itself. Size, location, penetration of serosa, microscopic appearance, and the presence or absence of metastasis are all of value in determination of the prognosis.

7. It is suggested that cancers of the distal stomach are treated adequately by subtotal distal resection, since 47 percent of those surviving such resections for cure were living five years later; furthermore, if nodes were negative, the survival rate was 63 percent.

8. For large cancers of the cardia or entire stomach, the preferable operation appears to be total gastrectomy with splenectomy and hemipancreatectomy. The exact operation, however, should be selected carefully since mortality rises with the extent of the procedure. Small cancers obstructing the cardia, particularly if they arise in a hiatus hernia, may be treated by proximal subtotal gastrectomy.

CLAUDE E. WELCH AND EARLE W. WILKINS
Annals of Surgery (1958), Vol. 148, No. 4, 678-679.

Relaxin—A Critical Evaluation

"1. The exact place of Relaxin in the treatment of premature labor is uncertain. Although some success has been reported, it has been of little value in our studies.

2. Relaxin does soften the cervix of pregnant women and thus it appears to be a worthwhile adjunct to the medical induction of labor. In a series of 62 patients treated with relaxin and oxytocin, successful induction was obtained in 71.5 percent. In a control group of 35 patients who received a placebo and oxytocin, the success rate was 22.8 percent. Both groups were selected on the basis of an unfavorable cervix."

MARTIN L. STONE, M.D. and
MARVIN ZUCKERMAN, M.D.
American Journal of Obstetrics and Gynecology (1958) Vol. 76, No. 3, P. 549.

Physiologic Considerations in Labor and the Puerperium

"1. Early marriage and early childbirth should be encouraged. It is at this period of life that a woman is best able to have her children and labor is usually less complicated.

2. Pregnant women should be instructed as to the physiology of pregnancy and labor and the care of the newborn infant in class instruction.

3. Labor and delivery are probably best accomplished in a maternity hospital or the maternity wing of a hospital where the facilities for safe conduct are provided.

4. Analgesia and anesthesia for labor and delivery must be accepted as a compromise with physiology. As such, these agents should be kept to a minimum in order not to interfere with the physiology of respiration of the newborn or the vitality of the mother. Frequent presence of the physician constitutes the best support of the patient in labor.

5. Arrangements may be made for the presence of the husband in labor or delivery as the couple desire. This often constitutes additional support and comfort to the patient.

6. Spontaneous delivery should be expected to occur in about 85 percent of cases. There seems no reason for operative interference where the course of labor is proceeding physiologically and mother and baby are tolerating labor well.

7. Episiotomy performed under local anesthesia or pudendal block facilitates the delivery and its careful repair returns the reproductive tract to satisfactory condition.

8. Upon delivery the baby should be kept at a level 6 to 8 inches below the uterus and subsequently in level below the placenta. The cord need not be severed until one hour after delivery and then may or may not be ligated.

9. At the conclusion of delivery and the repair of the episiotomy the baby may be placed at the mother's side for her to nurse and fondle.

10. Baby and mother should be placed in a safe isolated area for immediate postoperative examination and then roomed together in the mother's quarters until discharge from the hospital.

11. Well babies and well mothers may be discharged from the hospital twenty-four to thirty-six hours after delivery for puerperal care in the home."

THADDEUS L. MONTGOMERY, M.D.
American Journal of Obstetrics and Gynecology (1958) Vol. 76, No. 4, P. 714.

Vaginitis and Neonatal Affections

"A bacteriological study of the swabs as systematically taken in 300 women and their new-born infants, with, in a certain number of cases, the identifying of the strains by means of agglutination of the sera, has led the authors to the following conclusions:

1. 15% of the pregnant women were, at the time of delivery, bearer of pathogenic staphylococci in the vagina;

2. All infants, born from a mother free of vaginal staphylococcia, have presented no pathogenic staphylococci in the mouth and nasal fossa immediately after birth;

3. All infants, bearer at birth of pathogenic staphylococci in the mouth and nasal fossa, were born from mothers bearer of the same germ;

4. 82% of women affected with vaginal staphylococcia have caused infection of the newborn in the course of labor, i.e. 12.5% of the number of deliveries;

5. 73% of infants bearer of pathogenic staphylococci at the time of birth were still bearer of the same germ 12 days later (12% of the number of deliveries);

6. Of 100 infants, 27 were bearer of pathogenic staphylococci on leaving the Maternity; 12 were infected after birth (contamination from the hospital). The contamination from the hospital is admittedly preponderant, but there was, however, a proportion of 43% of infection at the time of delivery;

7. Spontaneous clearing of the pathogenic staphylococci in the newborn (27% of the cases) was less significant than that of Candida Albicans (60% of the cases);

8. Pathologic manifestations due to staphylococci occurred in those newborn still bearer of staphylococci on the 4th day after birth;

9. The identifying of the diverse strains taken from the mother and the infant, also from the infective foci in the event of pathologic manifestations, has shown a total serologic identify (agglutination of the sera) between the germs from the infant and those from the mother;

10. Transmission of staphylococci in the course of delivery represented 43% of the infection cases in the newborn. Thus is stressed the significance of a prophylaxis made possible by the detection and treatment of vaginitis."

J. BRET and CL. COUPE
La Presse Medicale, Jan. 31, 1959, Pp. 3-4.

Production of Impending Hepatic Coma by Chlorothiazide and its Prevention by Antibiotics

"The results show that chlorothiazide is another agent capable of producing impending hepatic coma in sensitive patients. Prevention of this syndrome by the concurrent administration of antibiotics was also observed. The exact mechanism for the development of this syndrome, which has been described in several different circumstances, is not clear.

Accumulation of ammonia in peripheral venous blood may depend on liver function, the size of portal collateral circulation or the extent of production or removal by other tissues. Philips et al. indicated that possible increased absorption of ammonia with failure of

metabolism by the diseased liver may be responsible for the development of hepatic coma after the oral ingestion of nitrogenous substances in these patients, and antibiotics have been shown to reduce the amount of ammonia absorbed from the dog's colon. Recent studies have demonstrated the success of antibiotics in the treatment of hepatic coma. Electrolyte imbalances and sedatives may also be important in the genesis of this syndrome.

In this study several changes of possible etiologic significance for the development of impending hepatic coma during chlorothiazide administration were observed, including hypokalemia and potassium loss, hyperammoniemia and alkalosis.

Hypokalemia and increased potassium excretion were a constant finding when these patients were given chlorothiazide alone or with an antibiotic. Impending hepatic coma, however, occurred only during periods when chlorothiazide was given alone.

Increases in arterial ammonia concentration during chlorothiazide administration alone were observed. In patients not included in this study development of alkalosis was also noted, and this finding has been reported by others. Since the principle that nonpolar ions (NH_3) may pass a cell membrane more readily than polar ions (NH_4^+) is well established, alkalosis would favor increased passage of ammonia (NH_3) across the cell membrane. Recently, Lawrence et al. estimated partial pressure of NH_3 (PNH_3) to be increased during alkalosis in animals, suggesting that increased intracellular NH_3 during alkalosis may be a factor in ammonia toxicity.

Hypokalemia developing during chlorothiazide administration to patients with cirrhosis and ascites has been observed independently by others. Sherlock et al. also noted the development of impending coma during chlorothiazide administration to patients with previous histories of this syndrome. It was their impression that impending hepatic coma produced under these conditions was related to hypokalemia and potassium deficiency since potassium chloride administration caused clinical and encephalographic improvement during chlorothiazide therapy. The success of antibiotics in preventing impending hepatic coma in susceptible patients given chlorothiazide suggests that this syndrome, as produced by chlorothiazide, is related to ammonia toxicity as well as other factors. At present, the etiology of hyperammoniemia during chlorothiazide administration is undetermined.

It is apparent that chlorothiazide is a useful diuretic in some patients with cirrhosis and ascites, effecting a transient increase in sodium excretion in the urine; however, many patients with cirrhosis and ascites respond only slightly or not at all to diuretic agents. Potassium cloride supplements may be given to avoid the development of hypokalemia. Caution should be exercised especially if the volume of urine is diminished. Anderson and Leragh have indicated that potassium toxicity may be a serious problem when potassium chloride is given to patients with strict dietary sodium restriction.

JOSEPH E. MACKIE, JAMES M. STORMONT, ROBERT M. HOLLISTER, CHARLES S. DAVIDSON
N.E.J. of Med. (1958) Vol. 259, No. 24, Pp. 1154-55-56.

Thrombocytopenia During Chlorothiazide Treatment

"Six cases are described in which thrombocytopenia appeared during chlorothiazide therapy. In two of them there was a direct connection between this drug and the thrombocytopenia, and a third showed positive in vitro tests for chlorothiazide.

Chlorothiazide was used in this clinic in about 400 cases last year, which indicates that a decrease in circulating platelets may appear in more than 1%.

In all cases, the thrombocytopenia was the only toxic manifestation of chlorothiazide in the bone-marrow. The reaction was usually brief, and the platelet-count returned to normal as soon as chlorothiazide was withdrawn.

These observations indicate the desirability of doing a blood-count when chlorothiazide is

given to old and debilitated patients, or when it is combined with other drugs that may have a depressing effect on the hemopoietic system."

P. NORDQVIST, GUN CRAMER, P. BJORNTORP
The Lancet (1959), I:272.

Esophageal Stricture from Accidental Ingestion of Clinitest Tablets

"Accidental ingestion of tablets used by diabetics for testing urine (Clinitest tablets) can cause a partial or complete stricture of the upper esophagus because of the action of the lye constituent. The contained copper sulfate may also play a secondary role. A case of complete stricture from Clinitest ingestion is reported.

Of four previously recorded cases, three have been in children. One of these also had a complete stricture.

An esophagram will confirm the clinical impression of esophageal stenosis or stricture. If the patient has contact with a diabetic and no etiology is apparent, ingestion of Clinitest should be considered."

CHARLES ZIMMERMAN, M.D.
A.M.A. Journal of Diseases of Children (1959) Vol. 97, No. 1, P. 103.

The Dangers of Indwelling Polyethylene Cannulae in Deep Veins

"Polyethylene cannulae in deep veins were used in 15 extensively burned patients. They facilitated frequent blood sampling and the infusion of nutritive fluids.

In ten of the eleven fatal cases antemortem thrombosis was found at necropsy. In the remaining fatal case, and in the four patients who survived, there were no signs of thrombosis.

One patient developed a septic thrombus: this was not the immediate cause of her death. Another possibly died from air embolism.

Limited indications for the use of indwelling cannulae in deep veins are suggested."

RUPERT INDAR
The Lancet, (1959), I:286.

Acute Hepatic Necrosis Following Iproniazid Therapy: Value of Glutamic-Oxaloacetic Transaminase Estimation in Early Detection

"Two cases of acute hepatic necrosis following iproniazid administration are described.

Estimation of serum-glutamic-oxaloacetic transaminase (G.O.T.) in 29 patients undergoing treatment with iproniazid showed raised levels in 9. The significance of this finding is at present uncertain.

In the interests of the patients' safety a raised serum G.O.T. level should be regarded as presumptive evidence of early hepatic damage, and discontinuance of the drug should be seriously considered."

C. M. B. PARE and M. SANDLER
The Lancet (1959), I:284

Control of Sepsis in Maternity Hospitals

"Following a mild staphylococcal outbreak of sepsis in babies in this maternity hospital, consequent on overcrowding, we reviewed our practice in the light of recent articles published in your journal, and well summarized in a leading article.

The conclusions we reached resulted in the following measures:

1) Avoidance of overcrowding: limitations of admissions by strict control of hospital bookings, and *earlier discharge home.*

2) Limitation of visitors: one visitor only for the first seven days. Exclusion of infected visitors (severe colds, or boils, etc.).

3) Rooming-in: the infants are to be kept with their mothers. Conversion of large nurseries into lying-in rooms.

4) Early isolation and barrier nursing by isolation nurses of infected cases and the early transference of infected cases to isolation block.

5) Isolation on admission of mothers with septic foci (boils, sore throat, vaginal discharge).

6) Routine nasal swab and high vaginal swab to be taken in all admissions.

7) Avoidance of the casual use of penicil-

lin. Penicillin should never be used until the antibiotic sensitivity of the infecting organism has been determined.

Penicillin should be given only to patients who really need it, and ideally when they are receiving it they should be in an isolated ward, and on discharge the room should be scrubbed down.

8) Staff: (a) All staff (medical, nursing, administrative and domestic) who have pathogenic nasal swabs should be referred to the E.N.T. specialist for his advice and those who passed for duty should use an antibiotic cream (e.g., 'Neobacrin') in the anterior nares if so advised; (b) staff who have any septic lesion (pustules, furuncles, styes, sore throat, coryza, or gastroenteritis) should be examined urgently and possibly placed off duty; (c) staff should apply chlorhexidine ('Hibitane') hand-cream after washing (some hospitals recommend that mothers use it too).

9) Infected Babies: (a) infected babies should be isolated, with the mothers, at the earliest possible moment; (b) bacteriological swabs (dipped in saline) from the lesion, umbilicus, and the anterior nares should be taken early for sensitivity tests and phage-typing; (c) nurses handling infected babies should wear gloves and plastic aprons.

10) Babies: (a) babies should be bathed in the nursery following delivery and not again until the eighth day; (b) dusting-powder containing hexachlorophane ('Ster-Zac') should be applied to the umbilicus and surrounding skin, the perineum, buttocks, groins, axillae, and creases of the neck; (c) Neobacrin cream should be applied to the anterior nares of the infected infants and their mothers.

11) Infected rooms should be air-sprayed and the walls, floors, and furniture should be scrubbed down with domiphen ('Bradosol') 1 in 500. Sheets and napkins and cotton covers should be boiled. Sterile binders should be autoclaved. Blankets should be soaked from 24 hours in ('Cirrasol OD') or domiphen (1 in 1000) before laundering. Screens should be sterilized with steam under pressure. Mattresses should be stoved. In future both mattresses and pillows to be covered with plastic covers, the covers than to be washed with domiphen solution. Better still 'Dunlopillo' mattresses might prove economical and these could be obtained gradually by replacement.

12) Dust: Replacement of dry methods for dusting, sweeping, and floor-cleaning in parts of the hospital where patients are exposed, by the use of suction-sweeping attachments and moist cloths. A sweeping-polishing machine should be used. Floor oil.

13) Soiled linen should be counted and bagged in a hut outside the maternity building."

ARTHUR CLIFT

The Lancet (1959), *Letters to the Editor*, I:308.



Remember When...?

CIRCA *1912*

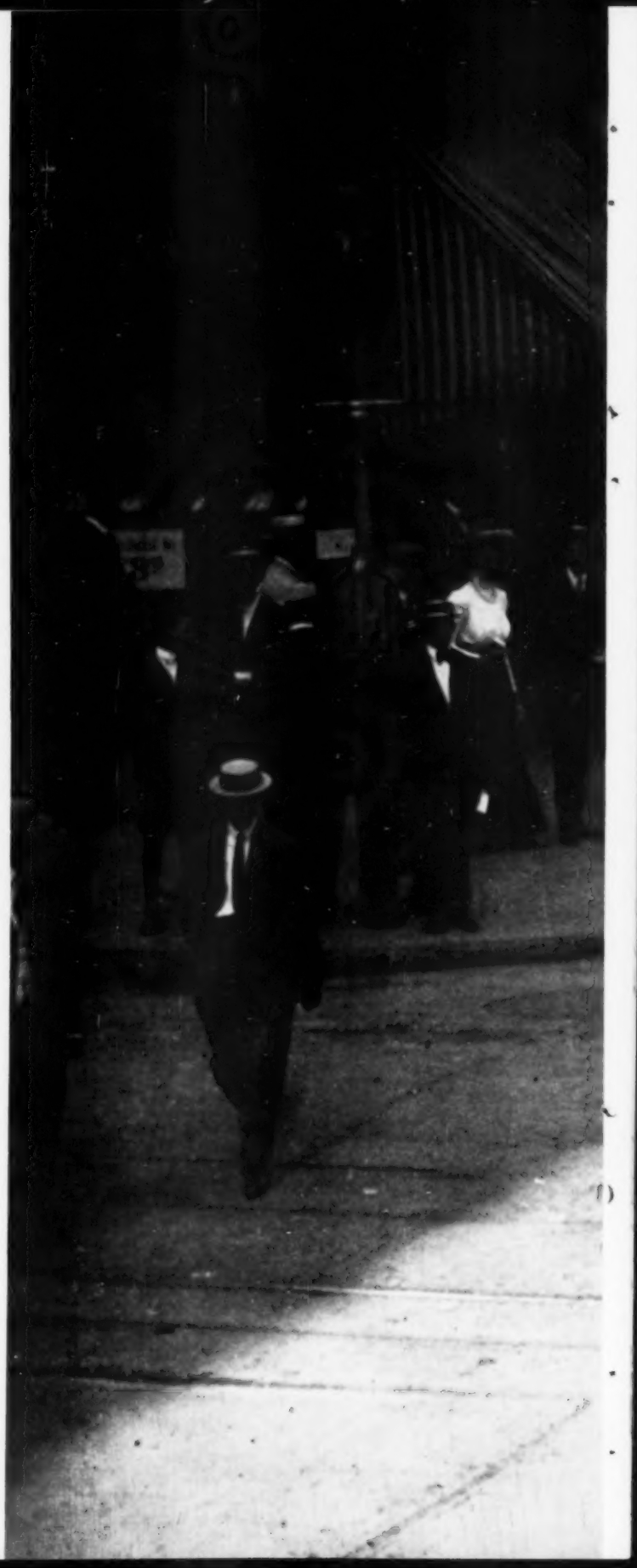
Bellevue had a horse-drawn ambulance service, founded shortly after the War between the States and continued to 1923. The Editor believes this picture was taken circa 1912, because he remembers the cut of the clothes of that period.

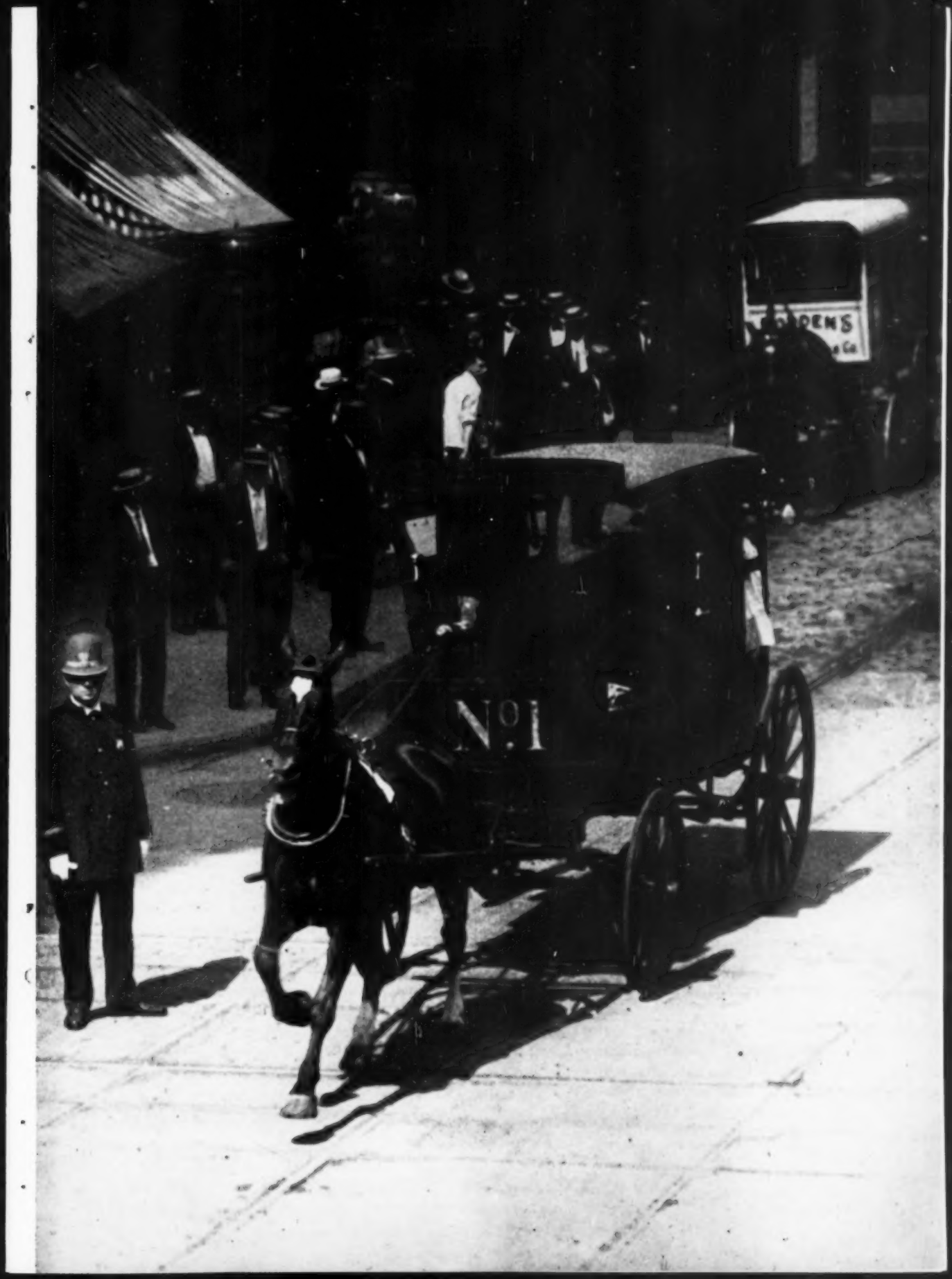
What happened in 1912? The Equitable Life Assurance Company building burned for two days, beginning January 19th. Six people were burned to death, and many were injured. The Bellevue ambulances stood by for more than forty-eight hours in the bitter cold. Milk-borne Septic sore throat was epidemic in Baltimore and Chicago. Thousands were taken ill.

Captain Henry J. Nichols, MC, USA, published his first paper on the use of Salvarsan in treating military personnel. Major Frederick F. Russell, MC, USA, described the "Results of Antityphoid Vaccination in the Army in 1911, and its Suitability for Use in Civilian Communities" in the J.A.M.A. Dr. James B. Herrick published his now world-famous observations on "Clinical Feature of Sudden Obstruction of the Coronary Arteries," *the first clinical description of coronary occlusion proven at autopsy*, in the J.A.M.A., Vol. LIX, Pp. 2015-2020, Dec. 7th.

What a year!

Photo: Brown Bros., N. Y. C.




No 1

THE TAX AUDIT

JOSEPH J. BERGER, C.P.A.
New York, New York

The tax audit is an occurrence most professional and self-employed individuals will have already experienced or may reasonably expect to experience in the relatively near future. It is an accounting of not only ones financial records but also of his business ethics and their application.

The tax review, although feared as the plague and longed for by none, can nevertheless be an almost "painless extraction."

With adequate records, and intelligent planning and preparation, the taxpayer can minimize the time expended and substantially reduce any tax deficiency that might have arisen.

This article has been prepared to convey the specific ramifications of the tax audit as it affects the practitioner of medicine. As such, we must fully understand why the physician is so frequently queried by the Treasury Department and subjected to such meticulous scrutiny.

Generally, the nature of a nonsurgical practice involves the collection of a substantial portion of the gross fees in currency rather than in checks. Such receipts are subject to obvious manipulation and present a very real temptation to nonreporting.

Psychiatry may be the exception to this rule since most psychiatric patients incur a debt that surpasses the cost of the majority of other illnesses due to the extended period of treatment. Such expensive treatment is paid usually by checks. The tax picture is also further motivation for payment by check since the taxpayer-patient would be most anxious to prove such substantial medical expenses. More subtle, however, is the fact that a Treasury agent must become familiar with the peculiarities of each medical specialty. He is cognizant of the relatively small nucleus of patients from which the psychiatrist draws his income as compared with other physicians. He is aware of the comparatively low ratio of patient "turnover" in a psychiatric practice. A review of the psychiatrist's appointment book and patients' charge cards would therefore be a simple undertaking for the auditor. All these factors leave but a small area in which manipulation should occur in a psychiatric practice.

But, as to all other physicians who have the opportunity, the Bureau of Internal Reve-

Mr. Berger is a Medical Management Consultant.

AND THE M.D.



nue is well aware of the temptation that exists and only with the exercise of a high degree of sagacity have they been able to cope effectively with the problem. However, the practitioner who reports one hundred percent of his total gross income should not feel complacent or believe that his tax report will not be subject to subsequent verification.

The criteria for audit selection are quite varied and all encompassing. A popular misconception regarding the bases of selection of tax returns to be audited, is that a suspicious entry or transaction has been incorporated into the return; or, that a fundamental rule of tax law has been erroneously interpreted; or, that distortions in mathematical representations have created disproportionate ratios and have departed from certain norms.

The existence of these conditions may well result in the return being selected for audit, but it should be emphasized that none of these items need be present in order to have you asked to pay a visit to your local tax collector.

Actually, the selection of returns to be audited is a prodigious undertaking and the screening procedure must therefore be a thorough and methodical process.

All returns are checked for mathematical correctness. Thereafter, returns are categorized as to those prepared using the standard deduction and those whose income are solely from sources subject to withholding. These relatively simple returns are checked on a volume basis.

The remaining returns are checked on a basis of approximately one in ten. However, this selectivity is weighted by the particular circumstances surrounding the individual return. The weighting process is influenced by such criteria as the type of return, type of profession, amount of gross income, amount of net income, type of error, method of income reporting, etc.

It would be ludicrous for a physician to believe that selection was based on which step the return fell when dropped on a flight of stairs. Many years ago, the selection process

was not much more advanced than this, but time and training has made the Department more sophisticated in its technics. A physician has litt'e chance for escape. Each aspect of the economics of the profession which points to eventual audit is listed below:

- Type of profession—Medicine
- Method of reporting income—Cash basis
- Gross Income—Higher than average
- Net Income—Higher than average
- Expense reporting—Frequently disproportionate to reported income
- Unrelated activities — Usually numerous, including capital gain or loss transactions, farm profits, and losses, royalties, etc.

What to Do

Now that it is quite certain that your return will be audited, what is expected of you as the day of reckoning approaches?

FIRST: Accumulate all records pertinent to the return.

SECOND: Be prepared to substantiate all computations including adjusted cost bases of capital assets.

THIRD: Make available for the auditor two types of highly significant analyses:

A. Mathematical tie-in of the funds available in your checking account as shown by your records and those of the bank.

B. Analyses of the total monies received during the year with that of the practice income, and receipts from all other sources including their appropriate identification.

FOURTH: Join forces with your wife and analyze your entertaining costs. List the restaurants and theatres attended during the tax year with specific dates. To this list add the cocktail and other parties you gave during the year. List, in juxtaposition to these events, the doctors and other individuals who attended each get-together. If you can recall specific patient referrals from these individuals, jot down the patients' names. Such a formidable list would serve only as an advantage in substantiating at least a portion of your deduction for entertaining expenses.

FIFTH: Relax.

Now that the audit has started, let the examiner set the pace. Don't volunteer irrelevant or extraneous information. It frequently misleads the agent and only prolongs the audit unnecessarily.

An example comes to mind of the physician who, in an attempt to place the auditor in a more receptive and amiable mood, mentioned his golf game with his friends at the club and how his game had improved while in Europe. It was the expenses of this trip to Europe that were deducted as the cost of a medical convention. Although the taxpayer eventually succeeded, he had a most difficult time in convincing the auditor that the expenses deducted were primarily for the advancement of his skill and knowledge.

We now enter the phase of the tax audit involving authentication and verification. It is fundamental, of course, to supply documentary substantiation wherever possible. There are areas, however, that do not lend themselves easily to the acquisition of tangible proof, viz: entertaining, auto expenses, convention costs, etc. Although the taxpayer's position may be considerably weakened by the lack of checks or vouchers, it is not entirely hopeless. It is relevant, at this point, to mention that although all expenses may be completely verified, a portion may nevertheless be disallowed on the grounds that the amount is excessive or unreasonable.

Adequate Verification

The Internal Revenue Service is cognizant of the fact that even the most thorough individual must be practical. It would be unreasonable to expect conclusive verification of each restaurant charge or taxi fare.

What then is the basis for adequate verification in these areas? Well, the key here is the amount that would be considered reasonable in view of the individual circumstances. These circumstances will vary with each practitioner and will be weighted by his specialty, if any; distance to hospitals, to determine the reasonableness of travel expenses; suburban or rural

area, as a means of guiding the local Internal Revenue office as to the expense of professional entertaining; and most important of all, the ratio existing between the unsubstantiated amount claimed and that of the total amount deducted.

Since the Director of Internal Revenue is generally of a somewhat parsimonious nature, he is slow to approve these questionable deductions. He may first insist on a cash availability statement showing the sources of available currency and the total amount thereof which has been spent on the itemized expenses.

As to proving the reasonableness of the unsubstantiated amount, one must look to his own ability to display a relatively high degree of eloquence. This is not to be construed to mean that a profound oratory will supplant reason and sound logic. A baseless deduction will be disallowed no matter how eloquently presented.

Several tax returns come to mind where the doctor-taxpayer deducted the expenses of his wife in attending medical conventions. After extensive preparation, the doctor explained to the agent that his wife's presence was important not only for secretarial purposes but also for entertaining doctors and their wives in their hotel suite. In one or two instances, they were able to show proof of having acquired referrals from the physicians for whom they had provided cocktails. The deduction was consistently disallowed on the grounds that they were not "ordinary and necessary" to the doctor's practice.

Possibly the basis for your deduction, although similar, has unique characteristics which set it apart from those disallowed the above taxpayers. If so, be prepared to set forth a lucidly intelligent reason for the deduction.

Upon completion of the examination, the agent will inform the taxpayer of the changes he has made, if any, to determine the adjusted net taxable income. If the taxpayer agrees to these changes with its resulting tax deficiency, he will be asked to sign a form indicating his acceptance. Most tax reviews are concluded at this level.

Occasionally, the taxpayer may feel that the adjustments made by the agent to the net taxable income are entirely or partially not justifiable. If he wishes, he may have recourse to an informal conference with a reviewing officer.

If an amount continues to be in dispute after this informal conference, the taxpayer has additional steps open to him of appealing to the Appellate Division, if necessary, later on to the United States Tax Court, and ultimately, the U. S. Supreme Court.

After final determination of the tax deficiency, interest is computed and charged the taxpayer for the period commencing from the date the tax was due on the audited return to approximately the date of signing the acceptance form. An advantage to signing the form indicating acceptance of tax deficiency during the early informal conference stages, is that the continual building of interest charges is immediately arrested.

Upon executing this form, the taxpayer is mailed a written report of the findings of the agent with appropriate explanations of the items to which he took exception. Shortly thereafter, the taxpayer will receive an invoice billing him for the tax deficiency plus the interest which has accrued.

Analysis

An analyses of the results of the examination should be made to determine not only the success or disappointment in the audit but also what reflections the audit had on the original tax representations.

In retrospect, the tax return should be reviewed in the light of the changes made by the agent, if any. If the adjustments are sizeable or drastic, the return should have been prepared with the exercise of greater care, better fact accumulating, and planning. On the other hand, if the return is accepted with no changes, it should serve as an indication that the return may have been prepared on a much too conservative basis thereby omitting possible legitimate deductions.

The tax audit serves a very useful purpose

for the doctor. It educates him as to how to be prepared more adequately for the next one. This thought is not meant to be facetious, but as a warning to the doctor to be more prudent and exercise greater care in preparing future tax returns.

At a time when the individual physician can receive no assistance from the government for retirement income, he must protect and preserve his earnings and accumulated wealth with foresight, planning, and determined vigor.

If you should receive your notice to appear before the Treasury Department, and you are unsure of your tax position, it would be well for you to consult your tax accountant or tax attorney. But if he is not available, application of the above rules and suggestions should be of assistance in guiding you through the audit.

127 East 60th Street

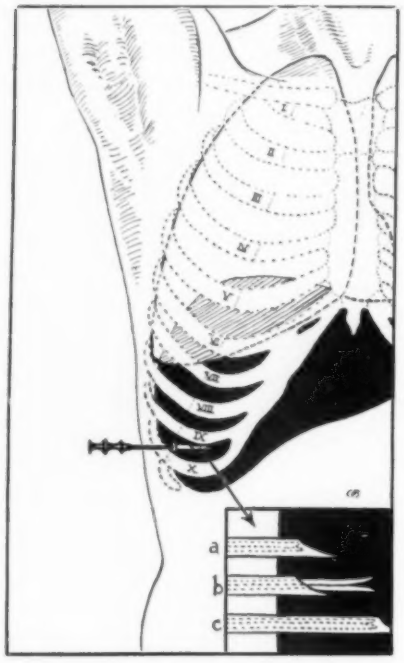
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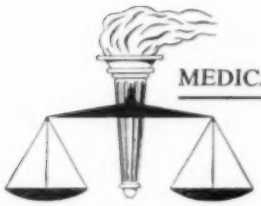
Technic of obtaining biopsy specimen with a Vim-Silverman needle.

a. The inner needle is retracted until the liver is entered.

b. The inner needle is advanced when the liver is entered.

c. The outer needle is advanced to cover the inner needle and protect the cut tissue, then the whole instrument is withdrawn.





MEDICAL JURISPRUDENCE

The Doctrine of Proximate Cause in Medical Malpractice Law

GEORGE ALEXANDER FRIEDMAN, M. D., LL.B., LL.M.

The three essential elements of a malpractice action are: (1) injury or death; (2) negligence of the physician; (3) a causal connection between the death or injury and physician's negligence.

In some cases it may be established that defendant's conduct has in fact been one of the causes of patient's injury or death. This is not a sufficient basis for legal liability. Plaintiff must carry the burden one step further and prove that defendant's negligence was the "proximate" or "responsible" cause of patient's injury or death. Defendant's negligence must not only be a cause but it must be the direct and immediate efficient cause of the injury or death.

The causal connection between the negligence complained of and the injury suffered must be by a natural and unbroken sequence, without intervening causes; i.e., except for the negligence of the defendant, the injury would not have occurred.

Proximate cause, then, is the significant, important, direct and immediate efficient cause of the injury.[1]

Plaintiff's womb became infected and she developed septicemia. She charged that defendant's alleged negligence in using his naked fingers rather than sterilized rubber gloves in inserting packing in the vagina caused the septicemia. The question for the Court was whether plaintiff suffered from septicemia before she called the physician or whether she became infected as a result of his improper treatment.

The Court held that defendant's failure to use rubber gloves, even if negligent, was not the proximate cause of plaintiff's septicemia. Expert testimony was to the effect that the womb may become infected from many causes, whether sterilized rubber gloves or sterilized hands are used. In a case of septicemia, it is often impossible to determine whether the infection was introduced by physician from the outside or not.[2]

Patient, dressed only in trunks, was discovered stretched out on the lawn in front of a Miami hotel in an "unconscious condition" at 1:50 a.m. An ambulance was summoned and patient was delivered to the hospital. After

a superficial examination patient was turned over to the police as a drunk. He was found dead in his cell at 7:00 a.m. Death was caused by air and hemorrhage in the thoracic cavity resulting from the piercing of the cavity by broken ribs.

The ultimate cause of death was the puncturing of the chest cavity by several of some nine ribs which had been fractured at the spinal column. What was the "proximate" or "legal" cause of death? Was it a suspected fall some twenty-three feet from the second floor of the hotel? Or was it the failure to hospitalize the man and on the contrary permitting him to be dragged around and moved about after admittedly negligent examination in the emergency room? A pathologist testified that the moving and shunting about certainly would aggravate the patient's condition and expedite his death. Would the patient have died in any event or could he have been saved by medical attention?

The trial court concluded that the evidence of causal relationship was too speculative to support jury consideration of the matter. The appellate court reversed this decision and held the question of cause should be submitted to the jury.[3]

"Legal" Causation and "Medical" Causation

The legal doctrine of proximate cause should not be confused with the medical definition of cause. "Cause" to the scientist is: "Specific cause, one the action of which produces only the one definite disease; such is the pathogenic microbe of diphtheria, tuberculosis, or tetanus."[4]

The legal view of "cause" takes into account not only the source of the harm, but the policy considerations of who ought to pay for, to shoulder the responsibility for the harm. These considerations "permit a conclusion that notwithstanding earlier occurrences, pre-existing conditions or other causal factors, one person had enough to do with another's harm that he ought to be legally responsible for it."[5]

The most vivid example of the divergency in the two views of causation is the medical and legal answer to the question: "Can trauma cause cancer?" The physician says: "A single trauma has never been known to produce a cancer in an experimental animal." A jury can find that despite expert testimony to this effect "the exceptional circumstances surrounding this case . . . justified the conclusion that there was causal connection between the plaintiff's injury and her cancer."[6] And the cases of cause are numerous which hold that legally at least a single blow can cause cancer.

Whereas a physician might be reluctant to state a cause of death, a Court can even pick a specific disease where it exists among many as the cause of death. An autopsy revealed that deceased was suffering from tuberculosis, cancer, Bright's disease, acute and chronic cystitis, acute and chronic prostatis with abscess formation and chronic selenitis. The court upheld a verdict finding that cause of death was cancer caused by a fall from a streetcar a year and a half earlier.[7]

A dentist negligently made and inserted plates in the mouth of deceased which irritated deceased. Deceased wore them for over a year, returning at various times for fittings. A cancer specialist then discovered deceased was suffering from sarcoma, a cancer of the jaw. Defendant dentist claimed deceased died from syphilis or tuberculosis; the court upheld a verdict against defendant. Such a verdict meant the jury decided that death was caused by cancer which in turn was caused by dentist's negligence.[8]

The Doctor Testifies to "Cause"

These divergent views of cause often bring embarrassment to the doctor on the witness stand and make him vow to shun the courtroom in the future. The aim of the doctor-witness is to find the source or etiology of a disease. The aim of the lawyer is to determine legal responsibility. The lawyer says: "Is X factor a sufficient causal risk upon which to pin liability?" The Doctor thinks: "Is X factor the pathological cause or source of the disease?" This leads to interchanges like the following (in a case where plaintiff claimed

trauma caused Parkinson's Disease, plaintiff's attorney is cross-examining defendant's medical expert):

Q. You don't think that either injury such as a concussion of the brain or fright, violent fright, or an emotional disturbance, any of them could bring this on?

A. No, I do not.

Q. You know, do you not, that your professional opinion in that respect is not accepted by all neurologists even in this district?

A. Nothing is accepted by all neurologists, but the preponderance of all the neurologists, the plurality would accept my view.

Q. However that may be, Doctor, without counting noses, it's a divided opinion; some neurologists think yes and some no?

A. That is true.

Q. One of you is wrong, is that right?

A. I don't think it is I.

* * * *

Q. . . . . of course like the rest of us. I judge that you have made mistakes along the line?

A. I frankly admit it.

Q. So that you must recognize at least the possibility that you might be wrong and that this thing can follow concussion of the brain; isn't that the truth?

A. I don't think it ever does. I will admit for the sake of argument that it's conceivable, but I don't think it's the case myself.

* * * *

(On Redirect Examination)

Q. By that type, Doctor, he is assuming the very thing that you are telling him isn't true in your opinion, isn't he?

A. I am so confused now, I don't know what anybody is thinking outside of myself.[9]

And in the end, note that the lawyer has forced the doctor to admit it is possible "conceivable," that injury could cause Parkinson's disease.

Burns

In some instances a causal connection is not hard to establish. Plaintiff received diathermy treatment. She was left alone in the room without means for calling the attendant. The setting of the machine jumped from 3000 to 3500 milliamperes. Plaintiff was burned. Verdict: for the plaintiff.[10]

As soon as a second possible cause enters the picture the jury is given a choice of causes. Plaintiff received x-ray burns. The court submitted to the jury the question whether plaintiff was unusually susceptible to injury from x-rays and if so whether the burns were due to this susceptibility or to defendant's negligent use of x-ray.[11]

Where more than one cause of injury or death is present then the jury must decide whether negligence is the more responsible cause of the two. For example, assume in the previous case patient was unusually susceptible to x-ray *and* defendant was negligent. Assume further that burns were so extensive that patient died. Experts testify patient may have died in any event. The jury will decide whether defendant's negligence was a responsible cause of death.

Fractures

Proof of proximate cause in fracture cases usually consists in convincing a jury that one of the many possible causes suggested by the evidence is more probable than the rest.

Cases where a fractured bone fails to unite properly present difficult problems in the proof of causation. For in many of these cases even proper treatment may produce imperfect results.

A four-year-old boy fell and fractured his arm. The fracture healed with a Volkmann's Contracture of the left forearm. The boy's parents contended the contracture was a result of tight bandaging. Expert testimony brought out that while tight bandaging might produce the condition, it might just as well

have been produced by the original injury to the blood vessels or by a thrombosis or embolism. Inasmuch as defendant's action was only one of the possible causes the court refused to submit the case to the jury.[12]

This is not to say that plaintiffs never win fracture cases. Juries have been able to find the injuries were more probably caused by physician's neglience than not, in fracture cases as well as other cases. A fifty-one-year-old woman received a judgment of $37,883.91 and costs against a California physician in 1955 for malpractice in treating a fractured femur. Defendant diagnosed plaintiff's injuries after a fall as a bruise and prescribed Anacin, hot baths, rest, and slight elevation of the knee. Some eight days later the injured hip bone cracked. Defendant only then x-rayed plaintiff and discovered a displaced fracture of the right femur with rotation of the head. He advised continued activity and exercise as remedial measures. Asceptic necrosis of the head of the femur developed and permanent disability set in. Two medical experts testified for plaintiff that necrosis would not have developed if the limb had been immobilized. This was sufficient to take the case to the jury.[13]

Erroneous or Negligent Diagnosis

Where the gist of the complaint is that defendant's erroneous or negligent diagnosis deprived plaintiff of proper treatment, plaintiff must show that the condition was one which in fact would have responded to treatment. The jury held to the tune of $30,000 that defendant's failure to cystoscope was the proximate cause of the development of plaintiff's incurable cancer. Defendant permitted a two year interval between cystoscopic examinations. The first examination revealed an enlarged prostate gland. The examination two years later uncovered a tumor in the bladder.

Expert testimony was to the effect that the age of the tumor was unknown. "We never know when cancers start or when they may start." A witness also stated: "A man that is going to form cancers in the bladders is going to continue to form them." Other experts stated that all tumors should be removed as quickly as possible; that x-rays sometimes can destroy a little tumor in the bladder; sometimes cancer can be cured.

The court held that while all their opinions were correct, none were material in deciding the issue of proximate cause. "Prior cystoscopy might have revealed the tumor had it been there when the cystoscopy was performed. But it does not follow that even if it were found it probably could have been successfully removed. It may be conceded that because of defendant's failure to cystoscope plaintiff there was no chance to eradicate the cancer. But it is a far cry from that to the conclusion that had defendant cystoscoped the plaintiff the cancer could probably have been successfully eradicated."[14]

The court ordered a new trial. The evidence while it indicated both negligence and detriment to the plaintiff was speculative and insufficient as a matter of law to establish that defendant's negligence was a proximate cause of plaintiff's injury.[15]

Intervening Cause

Where an independent cause is responsible for an injury apart from defendant's negligence, defendant's negligence is not considered to be the "proximate" cause. While judges have recited this factor in malpractice cases,[16] no clear example of an intervening cause is present in reported malpractice cases.

Intervening cause is clearly developed in the following auto accident case. Defendant Y's truck stalled on the highway. Plaintiff's car traveling south started to pass defendant Y's truck. Defendant B's car also traveling south crashed into rear of plaintiff's car, as a result of which plaintiff's car crashed into defendant Y's truck. Defendant Y's actions were not the proximate cause of plaintiff's injuries. Injuries were caused by the intervening act of Defendant B, which could not reasonably have been anticipated by Defendant Y.[17]

More curious is the corollary. A *dependent* intervening cause does not break the chain of causation and defendant remains liable. De-

fendant motorist struck plaintiff. Plaintiff's injuries were aggravated by physician's malpractice. Defendant motorist is liable for the injuries produced by physician's malpractice.[18]

Some courts reason that the malpractice is foreseeable, or at least a result which reasonably could have been anticipated. The original malefactor ought to be liable for the damages which can reasonably be expected to flow from the wrong.

The more usual basis assigned is that the additional malpractice could not have occurred but for the original injury. To that extent it is *dependent* on the original negligence and the original negligence is labeled the proximate cause of the injury.

The physician in the above case remains liable for his malpractice if plaintiff does not recover from the original wrongdoing. The physician, however, is liable only to the extent of the injuries he inflicted. In no event can plaintiff recover twice for the same injuries.[19]

Expert Testimony

Expert testimony is usually necessary to support the conclusion as to causation. In exceptional cases, as in proof of other elements of malpractice, lay testimony can support a verdict.

Where experts testify that they don't know the cause of a disease but in their opinion the negligent act caused the disease, a jury can find that the negligence did in fact cause the disease.

Plaintiff fell in the opening between the ramp leading to the plane and the plane itself. Three months later he developed multiple sclerosis. Plaintiff was awarded $50,000.00 damages. The defendant's expert testified that while he had observed cases where a diagnosis of multiple sclerosis had been preceded by trauma or injury in his opinion such trauma could not cause the disease in the cases referred to.

There follows a partial cross-examination of witness for the plaintiff:

Q. . . . Do you have an opinion as to whether or not there is any relationship between this accident . . . and this condition of multiple sclerosis?

A. My opinion is that the injury was a precipitating factor in bringing on the condition.

Q. You can't tell us with any degree of certainty that this accident had anything to do with the onslaught of this disease?

A. Well, it is my opinion based on the fact that he told me he had no symptoms before he had the injury and thereafter had symptoms.

Q. You don't know, though, do you, doctor?

A. I don't think anybody would know the absolute certainty, no.

Q. So you can't tell us now?

A. It is just my opinion.

The court upheld the jury verdict declaring that where there is a difference of opinion and where the opinion of a reputable medical expert is submitted on behalf of the plaintiff as to the question of causation by trauma the question is one for submission to a jury.[20]

Summary

1. Proximate cause is the direct and immediate responsible cause of the injury.

2. Policy considerations often determine in doubtful or borderline cases whether "a" cause is the "proximate" cause.

3. "Proximate" cause thus becomes "legal" cause, and differs greatly from the medical view of "cause."

4. If the malpractice is but one possible explanation for the cause of injury or death the judge will not submit the case to the jury if that explanation is "speculative."

5. There must be evidence which indicates that it was more probable that the malpractice caused the injury than that the other possible causes were responsible.

6. Where more than one cause contributed to the injury the malpractice must be proved the more "responsible" cause before physician will be liable.

7. Proof of proximate cause is difficult in cases of fracture inasmuch as even proper treat-

ment often produces imperfect results. The jury must decide from listening to the experts whether the result would have obtained in any event, or whether it was caused by the malpractice.

8. In cases of erroneous or negligent diagnosis it is necessary to prove that the original condition would have responded to proper treatment.

9. An independent intervening cause breaks the chain of causation whereas a dependent intervening cause does not.

10. Expert testimony is usually necessary to prove causation. In some instances it has been dispensed with.

11. In cases where experts are ignorant as to cause a jury's determination of cause will be upheld by the court when there is some evidence to sustain that judgment.

133 East 58th Street
New York, New York

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"MEDICAL TEASERS"

A challenging crossword puzzle for the physician

page 63a

A TIME FOR ACTION

The Surgeon Who Dared the Impossible



EDWARD R. BLOOMQUIST, M.D.

Called a murderer by stirred-up townspeople, a courageous doctor from the backwoods of Kentucky startled the medical world when he put his faith and scalpel to an "impossible" task.

December 13, 1809.

A tired country physician nosed his horse through the open gate of Blue Spring Ranch at Caney Fork, having traveled more than sixty miles from his home in Danville, Kentucky. Although in failing health, the doctor was needed—the need was urgent.

And Ephraim McDowell, M.D., had never been known to refuse a request for help.

Fatigue was heavy on his shoulders as he dropped from the standing horse and painfully stamped his feet to bring life to the aching muscles. The cold winter wind cut through his clothing and he shivered involuntarily as he glanced about him.

Blue Spring Ranch was desolate at this time of year. In warmer months the ranch brought its owner, Thomas Crawford, good crops of tobacco and wheat. Now, snow and ice gripped the bleak fields, and except for the stiff-legged plodding of a few farm animals moving slowly in the cold, the place was quiet.

The Crawfords, nearing the far side of the middle age, were expecting their sixth child. Jane Crawford, long overdue according to the calculations of her doctor, was apparently in an agonizing, prolonged labor. As her irregular pains continued, her physician began to worry. Mrs. Crawford was definitely not progressing as she should. Additional consultation was arranged.

Puzzled

The second doctor was also puzzled and as disturbed by what he saw as the Crawford's family physician had been. The patient was at a point where it was obvious they dared delay no further in obtaining surgical consultation. It was then that the call for help had reached McDowell. The attending physicians sent for him only as a last resort, for while all physicians in this area respected McDowell as an excellent surgeon, most regarded him with suspicion and jealousy. His European training, extensive practice, intense, retiring personality and strict religious standards had offended many of his contemporaries.

With the exception of this annoying professional jealousy which dogged him to his death, McDowell was recognized as the first, and for a long time the only well-trained surgeon west of the Allegheny Mountains. As such, he was the final word in surgical problems.

McDowell entered the farmhouse. Briefly he acknowledged the greetings of the doctors who had called him, exchanged a few words concerning the patient, and then slowly walked to the woman's room.

Pain

As he silently observed the changing expressions passing over Jane Crawford's face, McDowell was provided with a sensitive indicator of the severity of the woman's distress. When the pain held her, her full grey eyes disappeared in a mass of wrinkles as she squinted to avoid crying out; her normally straight lips firmed into a line. When the contraction passed, her drawn face relaxed for a few moments in a restless sleep.

McDowell examined her. Gently, his fingers ran over the distended abdomen. Then, performing a vaginal examination, he found the large mass to be freely movable. But he also found that what was supposed to be a fetus was in no way related to the uterus which manual examination revealed to be of normal size.

A wave of compassion spread over McDowell's face. Certainly the woman was not pregnant. Most probably her difficulty was the feared diagnosis: ovarian tumor.

If he was correct, Jane Crawford had at best, two torture ridden years before being claimed by death.

Diagnosis

The surgeon reported his findings to his colleagues. They felt that McDowell should explain the situation to the Crawfords.

The surgeon had never seen a tumor of this size successfully removed at surgery. In fact, abdominal surgery of any type was regarded as an impossible procedure; leading surgeons of the day felt it had nearly a one hundred percent mortality.

The only hope he could offer his patient was the thought that perhaps God in His mercy would perform a miracle. And unless such a miracle did occur, Jane Crawford was doomed.

McDowell turned to the suffering woman to relate his findings.

He knew that if he followed the surgical philosophy of the day, this woman was doomed. He had studied the outcome of previous abdominal surgeries and knew the probable consequences.

On the other hand, if he had the determination to perform surgery—and it would be experimental surgery at best—there was a chance he could save her.

He told her of the alternatives, then presented a daring proposition. If he performed the "impossible" surgery and she died, he could well be accused of murder. Her eyes opened wider as he said this. Yet, he was willing, he continued, to risk his reputation—an excellent one built upon fourteen years of hard work—and

perhaps endanger his own life for the remote chance that he might save her.

However, to have the best possible working conditions, he told Mrs. Crawford she would have to go to Danville for the surgery. This meant she must consent to run the risk of dying on the operating table, or worse, die on the journey to Danville.

Decision

It must have been difficult for McDowell to make this proposal, one which was contrary to his training, his judgment and his own nature. But for Jane Todd Crawford, the decision was even greater. Sixty painful miles to Danville, on horseback, exposure to wild animals and marauding Indians, the pain becoming worse as the tumor was wrenched from side to side by the horse's movements.

She was faced with an almost overwhelming picture of adverse odds. She knew the journey would be constantly interrupted by recurring abdominal cramps and the frenzies of pain they produced. She also knew of the possibility that the rough ride might tear the tumor from its pedicle, leaving her to hemorrhage to death in the middle of an unfriendly wilderness.

But Jane Crawford had faced pain and death before. And now it was clear that the two years of remaining life had little to offer her except increasing pain. When McDowell offered a ray of hope, slight though it was, she decided to place herself in the hands of God and His Servant. She didn't speak, but nodded her head in assent.

Jane Todd Crawford and the frontier surgeon had come to a decision. Now, it was time for action.

Frontier

Ephraim was born on November 11, 1771, in Rockbridge County, Virginia. In 1784, the family migrated to Kentucky, a wilderness on the fringe of the Virginia colony, where Sam McDowell became a judge of the First District Court. Immigrants continued to arrive at this new settlement and within a short time the town of Danville developed around it.

SOURCE OF STRENGTH

During surgery, McDowell was known to be deliberate and accurate. He had to be! He had no relaxation, no anesthesia, no modern instruments as we know them today. He operated with intense concentration, sweating liberally, regardless of season or temperature.

He liked to operate on Sunday. First, it was quiet — little other activity was planned for that day. Secondly, he felt support in the idea that the congregations were praying for him as he went about his work.

Much of his surgery was performed in the patient's home. The rest he did in his own home, for Danville did not have the luxury of a hospital. His intense religious spirit was apparently a source of strength to both him and his patients. He was never known to operate without a session of prayer. Frequently, he would write his prayers on a slip of paper, carrying them in his vest as he operated.

He was known as an excellent surgeon, but a "poor fever doctor." This is not surprising considering his contempt for internal medicine, a contempt which prompted him, whenever possible, to turn all such cases over to his associates. He kept few records, disdaining to write much of anything except his pre-surgical prayers.

Ephraim was not well educated as a youth, but he took advantage of the best the frontier had to offer. And when Transylvania Seminary (an institution destined for a significant place in frontier education) was established in 1785, he became one of its first students. In 1790 the Seminary became Transylvania University, the first major educational facility west of the Alleghenies.

In 1793, Ephraim McDowell left America

for the land of his ancestors. For two years he was a student at the University of Edinburgh. Compared to the rough rugged frontier of his growth, Scotland was a fantasy land. Although his mannerisms were primitive in some ways, the tall, broad shouldered, athletic young man found no difficulty making friends. His open, friendly, almost square face and genial manner, developed during his twenty-two years of wilderness life, gave him an easiness of association which surmounted the obvious contrast between himself and his urban bred associates.

McDowell was not a brilliant scholar, but he applied himself diligently. He thought of being a country doctor and very little else. Used to rugged living, his independent spirit and unusual self-reliance, novel in Edinburgh, gave his instructors many moments of concern. Even so, they regarded him as a promising physician.

Surgery

Surgery and anatomy fascinated him, but internal medicine was a bore. It was too slow. Surgery on the other hand offered a dramatic method of therapy which appealed to his pioneer spirit, for deeds, not words were the order of the day in Kentucky. (His antipathy toward medicine progressed until it became one of contempt. At one period of his life he was known to refer to it as more of a curse to humanity than a blessing.)

Having found his forte, McDowell spent all his energy trying to find out everything he could about surgery. Glancing about him he discovered the fields he loved the best were being taught in greater concentration and by better men in private schools than they were in the University. Thus, after two years of University training, he left for private instruction by Dr. John Bell, a prominent teacher-clinician in Edinburgh.

When he returned to Danville, he traversed his practice area of hundreds of miles on horseback, performing all the known operations of the day in crude, picturesque settings.

There were six McDowell children, two sons and four daughters. The older son, Shelby, might have followed in his father's footsteps had not an unkind fate decreed otherwise. At an early age he inhaled a wheat spear and before help could be summoned he died of respiratory obstruction.

The younger son manifested a dislike for medicine, punctuating his disinterest by fainting each time he came in contact with blood.

Deliberate, Accurate

As a surgeon, McDowell was scrupulous. He insisted upon studying and outlining, whenever possible, the anatomy and technical ap-

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FIGHTING LINE

McDowell was a man with an extraordinary background. His ancestry included a long line of stubborn Scotch warriors of the clan Dowell. His great-grandfather, grandfather and father had all engaged in historic battles. The first Ephraim had fought in the English Revolution, enlisting at age sixteen. Grandfather John was killed in an Indian battle on Christmas day, 1742. Dr. McDowell's father, Samuel, played an important role in the American Revolution, having fought under Washington as a colonel. In 1776, the elder McDowell was a member of the convention at Williamsburg, Virginia, which instructed its delegates to the Continental Congress to declare the colonies free. He was president of all the early Kentucky conventions and was one of those who framed Kentucky's constitution. When Kentucky was admitted to the Union in 1792, Sam McDowell was president of the convention responsible for the step.

Between battles and political responsibilities Sam and Mary McDowell found time to raise eleven children. One of these, Ephraim, was destined to enter the hall of medical fame.

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proach to all proposed surgery. His assistants were stringently rehearsed in their roles and carefully trained in anatomy, for McDowell did systematic dissections in his own laboratory.

During surgery he was deliberate and accurate. He had to be! He had no relaxation, no anesthesia, no modern instruments as we know them today. He operated with intense concentration, sweating liberally, regardless of season or temperature.

He liked to operate on Sunday. First, it was quiet—little other activity was planned for that day. Secondly, he felt support in the idea that the congregations were praying for him as he went about his work.

Much of his surgery was performed in the patient's home. The rest he did in his own home, for Danville did not have the luxury of a hospital. His intense religious spirit was apparently a source of strength to both him and his patients. He was never known to operate without a session of prayer. Frequently, he would write his prayers on slips of paper, carrying them in his vest as he operated.

He was known as an excellent surgeon, but a "poor fever doctor." This is not surprising considering his contempt for internal medicine, a contempt which prompted him, whenever possible, to turn all such cases over to his associates. He kept few records, disdaining to write much of anything except his presurgical prayers.

Preparation

This, then, was the type of man who quietly left the house of the William Crawfords in mid-December, 1809, climbed upon his waiting horse and headed back to Danville to prepare for his forthcoming "experiment."

Shortly after, Jane Crawford, accompanied by neighbors on her journey, awkwardly mounted the sidesaddle of her horse, balancing the tumor on the horn of the saddle. Four days later, she arrived in Danville. Here, she was a guest in McDowell's home until she recovered sufficiently from the trip to undergo surgery. Some days later, she walked with assistance to the room chosen for surgery.

This was a morning somewhat different from those to which McDowell was accustomed. Normally, the town raised prayerful hearts and voices in his behalf as they went about their tasks. Today, it was quite the opposite. The town was disturbed at McDowell's proposed breach of surgical taboos.

Even his nephew James McDowell, newly graduated from Philadelphia, whom Ephriam had chosen to take over his work because of continuing poor health, opposed him. The young man had no desire to become involved in this radical undertaking. If it failed it could ruin his as yet unestablished reputation. Thus, he refused to even come into the room where the operation was to be performed.

As he thought about it, however, the idea must have struck him that if the surgery was successful he would be associated with a miracle, for at the last minute, on the morning of surgery, he agreed to assist McDowell.

The town parson also had something to say about the proposed operation. Having nothing more to contribute than criticism, this itinerate minister did his best to stir the townspeople against McDowell. Falsely assuming the role of prophetic interpreter of the purposes of God, an event not uncommon among theological critics in the history of medicine, he denounced McDowell as a murderer.

It is easy to condemn this clergyman, in retrospect, as a fanatic, an obstacle to progress. At that moment, however, he reflected current medical opinion. If McDowell had been living in the shadows of the University of Edinburgh, it is probable that Jane Crawford would have been doomed to death and McDowell would not have been the first oophorectomist. Smothered by cautious consultation and overshadowed by the fact that he was attempting something considered impossible, even McDowell might have reneged.

One cannot blame the physicians either. Without this cautious attitude, far too many "experimenters" might have been given free rein to dismember and destroy unwitting patients.

Whether right or wrong, a fanatical gesture

FEE

An interesting sidelight arose concerning the fee McDowell charged for this procedure. Although five hundred dollars is nearly twice that currently charged for an oophorectomy, particularly in a time when money values were far different from now, Overton paid the bill without comment. When the check arrived, however, McDowell returned it, for Overton has obviously made a mistake. The amount read fifteen hundred dollars. But the check came back by return mail with a short note from Overton stating that even this amount was inadequate compensation to pay for their gratitude and the new lease on life offered his wife.

or inspired conviction, the time had come to debunk the long adhered to theories of never operating upon the abdomen. Fate had chosen the capable Ephraim McDowell.

In Danville, McDowell was surgery. He had no competition, no opinions more learned than his, no set of rules stating what he could or could not do in applying his surgical techniques. In what he did he was governed by his faith, his knowledge and his responsibility to his patients.

Having convinced himself he was in the right, McDowell decided to go ahead as planned, despite the opposition.

He retired to his quarters the evening before surgery and spent many hours in prayer. One of these prayers he wrote on a slip of paper, planning to carry it with him in the morning. It proved to be far more than a source of spiritual solace. The written prayer provides documentary proof of McDowell's real interest in performing surgery on Jane Crawford—an interest directed entirely toward her benefit.

"Almighty God be with me I humbly beseech Thee, in this attendance in Thy Holy hour; give me becoming awe of Thy presence, grant me Thy direction and aid, I beseech Thee, that in confessing I may be humble and truly penitent; in prayer, serious and devout; in praises, grateful and sincere, and in hearing Thy word, attentive and willing and desirous to be instructed. Direct me, oh! God, in performing this operation, for I am but an instrument in Thy hands and am but Thy servant and if it is THY *will, oh! spare this poor afflicted woman. Oh! give me true faith in the atonement of Thy Son, Jesus Christ or a love sufficient to procure Thy favor and blessing; that worshipping Thee in spirit and in truth my services may be accepted through His all-sufficient merit. Amen."*

Jane Crawford awakened early on the morning of the operation. With the help of her attendant, Mrs. Baker, she washed, dressed and was assisted to the surgery. Approaching the operating table, she sat on its edge, gingerly eased herself along its hard surface. Grasping the table edges with her hands, she reclined on her back. The patient was ready.

The surgeon, Kentuckian Ephraim McDowell, was also ready.

Several people were present for the event. Assisting the surgeon were Drs. James McDowell (nephew) and Albin Smith, McDowell's associate. Charles McKinney, a medical preceptee and Mrs. Baker, attendant, completed the complement.

The patient was quite awake. There was no pretense of asepsis as we know it today. Anesthesia consisted of a determined spirit reinforced by a continual flow of selected psalms which the patient recited during her ordeal.

Incision

Stepping to the table, the surgeons removed only such clothing as was necessary to expose the field of surgery. McDowell marked the planned incision line with a pen, then, generously, gave the scalpel to his vascillating nephew.

James made a halting superficial incision, after which he returned the knife to the surgeon.

McDowell carried the incision for a length of nine inches, three inches from the lateral border, the rectus abdonimus muscle. Upon opening the peritoneum, the tumor popped into view. Around it the intestines emerged; frequent moistening kept these in reasonably good condition.

Completed

Working rapidly, a ligature was placed around the Fallopian tube and the tumor pedicle. The surgeon then incised the tumor removing some fifteen pounds of gelatinous material. With the tumor deflated, another seven and a half pounds of solid ovary was excised.

The semi-conscious patient was now rolled to her left side to empty the abdominal cavity of blood that accumulated during the procedure.

Surgery completed, the opening was closed with interrupted suture, the intestines having first been returned to their normal habitat. Strips of adhesive tape were placed between every two sutures to assure additional wound support. For reasons best known to him, McDowell chose to bring the ligature placed around the pedicle to the outside, through the lower end of the incision.

The operation was completed in 25 minutes, the wound dressed, and the patient carried back to her room.

Jane Crawford proved to be a premature advocate of early post-surgical ambulation a full century before it became accepted practice. To McDowell's dismay, he found his patient casually making her bed when he came to visit her on the morning of the fifth post-operative day, a finding that encouraged him to take precautions to prevent her being so energetic in the immediate future. He kept her at his home for another twenty days then permitted her to return home by horseback.

The "experiment" was more than successful. It gave Jane Crawford thirty-two more years of life which she lived happily until death finally claimed her at the age of seventy-nine on March 30, 1842.

McDowell was pleased but apparently not overly impressed by his pioneer effort in abdominal surgery. He credited most of his success to the will of God rather than any skill or judgment on his part.

Because of the favorable outcome of his first case, he soon attempted two additional cases, both successful. But it was seven years before he got around to reporting his epochal work. Disinterested in writing and not particularly convinced he had done anything spectacular, he would not comply with the urgings of his nephew James and cousin William, also a physician, who saw the importance of making the work known.

Report

When McDowell at last got around to writing a not too literate story of the surgery, it was apparently due to the argument on the part of supporters that it would please his teacher John Bell. He made two copies of his manuscript. The first he sent to Dr. Bell, the other to Dr. Phillip Syng Physick of Philadelphia with the request it be published if found worthy. Physick, an important surgeon of a prominent family and with a more than adequate educational background, sensed a controversy, deposited the manuscript in "file thirteen."

The manuscript intended for Bell fell into the hands of John Lizars, a competent physician who had taken over Bell's practice after the latter became ill and left for Italy to rest. Lizars for the moment was not too impressed. Thus, the paper that had taken seven years to come into being was laid on the shelf.

Published

William McDowell was not willing to let the matter drop, however. He obtained a copy of the article and personally took it to Dr. Thomas C. James, Professor of Midwifery at the University of Pennsylvania and an editor of *Eclectic Repertoire*. The professor presented the manuscript at one of his classes. At its conclusion the audience burst into applause. After this acceptance, the paper was published in 1817. Entitled "Three Cases of Extirpation

of Diseased Ovaria," it appeared in volume 7, page 242 of Dr. James's journal. Its publication created a world wide reaction that displaced discussion of other current events to that of the frontier surgeon who had dared to do the impossible.

Many, however, stringently disapproved of the occurrence, branding McDowell a woman butcher, quack and out and out liar.

His principal critic was Dr. James Johnson whose caustic and unethical pen denounced him in the pages of the *London Medical Chirurgical Review* in which he was permitted to write editorials. His prejudice is best demonstrated by his remark that there was little hope for European doctors to compete with McDowell even if he had accomplished an oophorectomy, which Johnson completely doubted, because all patients "of this backwoods doctor," with one exception "were slaves who bore cutting with the impunity of a dog."

APPRENTICE DOCTOR

Ephraim McDowell wanted to be a country physician. Apparently, his parents concurred with his desire for they permitted him, at the age of nineteen, to become an apprentice to Dr. Alexander Humphreys of Staunton, Virginia.

Humphreys, a graduate of the University of Edinburgh, was an aggressive, up-to-date physician. He was a careful anatomist and taught his apprentices anatomy by dissection. This, unfortunately, created a personal problem which became so great he was forced to leave the state.

In 1788, an Englishman William Richardson Watson disappeared. Shortly thereafter a bag of human remains was found in a cave; the remains bore the undeniable stamp of recent anatomical dissection. Humphreys was slandered by local gossip linking him with the dissection and possible murder of the missing man. Law suits followed, and although testimony was introduced clearing Humphreys of this crime, additional facts were presented which showed he had been guilty of disinterring at least one body and using it for teaching purposes. Town sentiment and the resulting ugly attitude caused Humphreys to leave for Kentucky.

Lizars

In October, 1824, John Lizars decided to attempt an oophorectomy. Although it must have taken a great deal of personal courage and integrity, he reported his results. His long brilliant dissertation was one reporting failure, inadequate diagnosis and a superabundance of faulty consultation occurring beneath the protective shadow of an ivory tower of medical training. In this report of his own failure he included McDowell's complete manuscript as a quotation, giving McDowell credit for his original work.

Much can be said about John Lizars. He was extremely honest. His contemporaries considered him an excellent surgeon. Despite this, this is the record of his attempt at abdominal surgery:

On Wednesday, October 24, 1823, surrounded by a retinue of prominent surgeons, he made an incision that reached from the ensiform cartilage to the pubic. Having given himself this liberal exposure to the abdominal cavity, he became extremely anxious, with good reason, that his patient might die from "peritoneal inflammation" as was currently taught in better medical circles. Attempting to prevent this, he wrapped the well visualized intestines in towels moistened with water heated to body temperature. Then, he looked for his tumor. Regrettably it turned out to be an accumulation of fat.

In 1825, on three separate dates, February 27, March 22, and April 24, Lizars made three more attempts. One patient died, one recovered. The third never received complete surgery inasmuch as technical problems arose and the surgeon rapidly discontinued the operation.

Noting this remarkable series of performances, the surgeons of Scotland discontinued attempts at abdominal surgery until 1845 when Edinburgh's Dr. Handyside revived the procedure.

Criticism and Apology

Irritated and appalled by the storm of contempt and disbelief which his manuscript had stimulated, McDowell published two additional articles. One of these was a short card directed to the students and faculty at Transylvania University in 1826 in which he defended his actions. The other entitled, "Observations On Diseased Ovaria" was published in September, 1919, in the *Eclectic Repertoire*. In this he reiterated the principles set forth in his first paper and added two more successful cases. He took occasion at this time to tee off on inadequately trained surgeons who attempted to do procedures for which they were not qualified.

In London, Dr. Johnson was still ranting away. In January, 1825, he reaffirmed his stand against McDowell with the statement:

In spite of all that has been written respecting this cruel operation we entirely disbelieve that it has ever been performed with success nor do we think it ever will.

But in October, 1826, the garrulous editor was forced to eat humble pie.

With reluctance, he wrote the following editorial:

A back settlement of America—Kentucky—has beaten the mother country, nay, Europe itself, with all the boasted surgeons thereof, in the fearful and formidable operation of gastrotomy, with extraction of diseased ovaria . . . There were circumstances in the narrative of some of the first three cases that raised misgivings in our minds, for which uncharitableness we ask pardon of God and of Doctor McDowell of Danville . . .

In time other British authors followed suit in admitting oophorectomy was, indeed, a possible procedure. Some, however, like Spencer Wells, did more than jump on the bandwagon —they loaded it with mildewed hay. Trying to prove the procedure had really originated in Great Britain, they credited English surgeons, such as Dr. Robert Houstoun of Glasgow who punctured an ovarian cyst in 1701, draining it of its fluid then closing the small puncture wound, as being an example of several British surgeons who had preceded McDowell in performing the operation. Right, however, prevailed and in its own good time permitted McDowell to become generally rec-

PRESIDENT'S PRECEDENTS

McDowell's record of successful lithotomies should also be mentioned. According to Gross he did thirty-two of these without loss of a life. One of his most spectacular lithotomies was performed upon a seventeen-year-old boy who came to him for surgery in 1812 for removal of a bladder stone. Some days later the boy walked home with the stone in his pocket, a mute reminder of his previous problem. Understandably, he always retained admiration for his benefactor, and later, when James K. Polk became president of the United States, he remained in contact with the doctor who made his later political success possible by restoring his health.

In the summer of 1822, McDowell was called to go several hundred miles by horseback into the interior of Tennessee, to perform an oophorectomy on Mrs. Overton. The case presented a particular problem because the patient was extremely obese and the surgeon needed help traversing the four inches of fat that overlaid her abdominal muscles. Fortunately, he was able to obtain assistance of two neighbors. One was a lady, Mrs. Priestly. The other a well-known general, Andrew Jackson. Quite probably Mr. Jackson is the only U. S. President who ever served as first assistant at a major surgery.

ognized as not only the "father of oophorectomy" but, quite probably, of modern abdominal surgery itself.

Capable of performing with distinction all surgical procedures known to his day, as well as those which were his own innovations, McDowell is credited with having crossed the Atlantic three times to perform Caesarean sections, two of which were successful. The only proof of this, however, is a testament of his granddaughter who frankly states that only members of his immediate family knew of his trips. There is, unfortunately, no other known corroboration of this statement.

In 1830 McDowell was reaching the peak of success. One afternoon on the twentieth of June as the press of duties briefly subsided, he permitted himself one of his few overindulgences. It was berry time, and McDowell wandered through his burgeoning berry patch, sampling the fresh fruit. In a few hours he became acutely ill. Fellow physicians, called in consultation for the severe abdominal cramps, nausea and vomiting that were the uneasy symptoms of his underlying distress, diagnosed the problem as an acute inflammation of the stomach. McDowell disagreed. He felt he had swallowed a poison bug.

Within a short time the pain became worse and the attending doctors, sensing this was no ordinary problem felt advised to suggest that if McDowell had any last business he might be wise to take care of it now. For Ephraim McDowell, who as far as he was able had made his peace with God and man, this advice was superfluous. With family and friends gathered around him he stated he had made all the arrangements necessary. He acknowledged the possibility of imminent death, but denied any fear of the unknown.

"I close my eyes in death," he said, "forgiving those who have done me any injustice. And with a happy and peaceful assurance of soon being with Him Who has ever guided my earthly pilgrimage, Who forgiveth . . ."

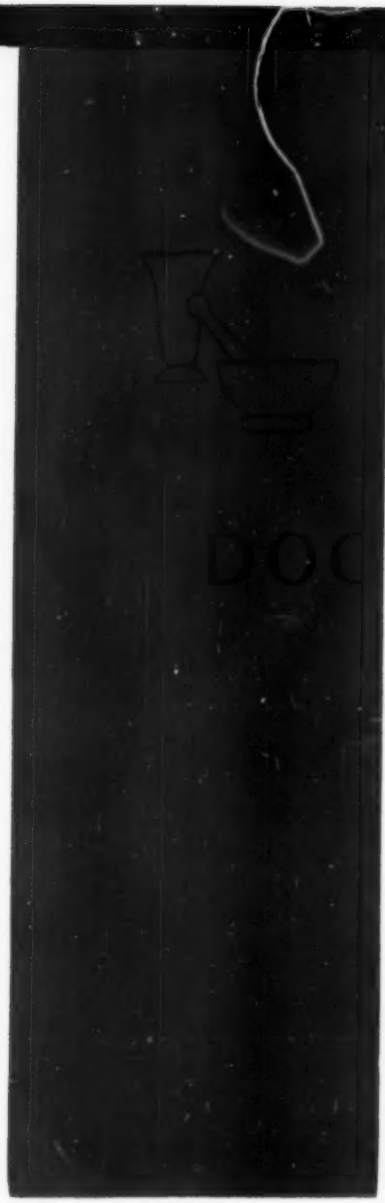
He paused in the middle of his sentence, possibly to enjoy for the last time the warm Kentucky evening breeze as it moved gently over his stolid face.

It is ironic that he should die as he did. Had fate decreed otherwise, and he had been doctor rather than patient, it is possible he might have been able to save a life by performing another notable first. For Ephraim McDowell had an acute appendix which, upon rupturing, caused his death.

The death was premature. But though limited in years, McDowell's life was crammed with unprecedented efforts to help humanity. A man of action, he lived by faith. With the self assurance and trust in his God which served him in life, so too, he entered the valley of death.

June 20, 1830. The sun faded and the country home of Ephraim McDowell became quiet. It was evening. And for Dr. Ephraim McDowell, aggressive pioneer surgeon, the time for action had passed.





MEN WHO
MADE THE MEDICINE

The Remarkable DOCTOR UPJOHN

The Michigan physician championed bank reform and shorter hours for the workingman; he served as mayor of his city and gave generously to provide it with cultural facilities. But his most noteworthy accomplishments were in the pharmaceutical field. The company he founded and guided through difficult times today is known and respected throughout the world.

As evidenced by their names, many prominent pharmaceutical houses originated as family enterprises. Among those which began in this way is The Upjohn Company of Kalamazoo, Michigan, established nearly 75 years ago through the initiative and inventiveness of Dr. William Erastus Upjohn. A physician in Hastings, a town about 35 miles from Kalamazoo, Dr. Upjohn was joined in the undertaking by three brothers, two of them also physicians.

The starting point for the firm was a pill manufacturing process devised by Dr. Upjohn. In the 1880s, the compressed tablet was unknown and pills were a widely utilized form of medication. As then made, however, pills frequently did not contain the specified dose of medicine, and many were so hard they could be driven through a pine board without breaking. Dr. Upjohn worked out a method of producing pills that could be depended upon to contain the specified dose of medicine and to dissolve in the patient's abdomen, and which consequently had a considerable, if brief, vogue.

When his "friable" pill was superseded, the Michigan

physician found means to keep the company going and to develop it into a sizable firm. He headed The Upjohn Company from its inception to his death in 1932 at the age of 79.

The personal history of Dr. Upjohn is worth relating for two reasons. He was an authentic "original," with vision and fresh ideas in many fields beside the manufacture of drugs; for example, he anticipated by more than 30 years modern schemes for insuring bank deposits. In addition, Dr. Upjohn's career reflects much of the development of the modern pharmaceutical industry, the source of the great majority of the therapeutic agents employed by the physician today.

Family of Doctors

"Dr. Will" (as he was called by Upjohn employees) was a short, stocky man with a square face and jaw. In early manhood he wore a short, dark beard, but for the last three decades of his life was clean-shaven.

The Upjohn Company founder was born on June 5, 1853, in Kalamazoo. His father was Dr. Uriah Upjohn, a native of England who had come to the U.S. as a young man, obtained a medical degree from the Columbia University College of Physicians and Surgeons, and moved to the wilderness of western Michigan to practice.

Dr. Uriah and his wife—daughter of a pioneer settler of the area—had twelve children, eleven of whom survived. Almost all were sent to Ann Arbor to attend high school or the University of Michigan, and four graduated in medicine: the oldest daughter, Helen, and three of the four boys — Henry, the oldest son; William, the second; and James, the youngest.



An early auto enthusiast, Dr. Upjohn had one of the first cars in Kalamazoo.

The Upjohn children grew up on a farm, where contact with farm tools and implements was early and intimate—an experience that endowed the boys particularly with a strong mechanical bent. In Dr. Will's case, this manifested itself in experiments on the manufacture of pills, started soon after he had set up in medical practice in Hastings.

His basic idea was to "grow" pills by alternately spraying moistening agents and sifting powdered drugs onto "starter particles" in a revolving pan. The procedure yielded a pill whose composition could be closely controlled and that disintegrated readily.

Dr. Will termed the built-up pill "friable" because it could be crumbled to powder under the thumb. (A drawing of Dr. Will's thumb crushing a pill was the Upjohn trademark for nearly 60 years.) In 1883 he began manufacturing a variety of friable pills in the attic of his home, for sale to physicians in the area. Demand soon forced him to move his "factory" to an abandoned Hastings feed mill.

In 1885, he gave up the practice of medicine entirely in order to devote himself wholly to drug manufacturing, and moved to Kalamazoo, where, with the aid of his older brother, Dr. Henry, he formed the Upjohn Pill and Granule Company, a partnership.



W. E. Upjohn was past 70 when his son's death forced him back into harness as firm's head.

First Price List

The new firm began operations in the basement of a block of stores and offices. In 1886, it moved into a building of its own, erected with money advanced by Dr. Henry, who was a successful businessman as well as physician. The company's first price list, issued that year, consisted of quinine, cathartic, Blaud's and other pills of the day, prepared in friable form —186 formulas in all, compounded from 56 different drugs, chiefly botanicals.

The pill and granule company was very much a family affair. Dr. Will bought the raw materials and "introduced" the finished products to druggists, wholesalers and dispensing physicians, in addition to serving as head of the firm. He and Frederick L. Upjohn—the non-doctor brother—devised pill counters, bottling machines and other equipment. Later, Frederick directed the company's first branch office, in New York. Dr. James, who joined the company on graduation from medical school, had charge of production. Dr. Henry remained in medical practice, but was relied on heavily for advice; he had studied pharmacy as well as medicine. Cousins and other relatives were taken on in a number of capacities.

Early in 1887, Dr. Henry died of typhoid fever. His death brought about the first of several changes in the firm which were, over a period of two decades, to transform it from a partnership to a corporation, shorten its name to The Upjohn Company, and leave Dr. Will the chief stockholder.

Weathering a Crisis

In the meantime, the company had to weather a crisis brought on by the development

of the compressed tablet in the 1890s. Since tablets are easier to swallow than pills, the tablet soon proved more popular than the pill, friable or not. Even the company's reputation for quality—Dr. Will had insisted on high quality standards from the start—availed little. The firm's difficulties were compounded by failure, due largely to Dr. Will's inexperience, to set aside an adequate reserve during the good years.

Dr. Will attempted to offset the decline in friable pill sales by entering the "buyer's label" business (manufacture of goods for sale under the buyer's own brand name) and by broadening Upjohn's own line to include hypodermic tablets, elixirs, syrups and other standard medicinals. Among the few expedients not tried was advertising directly to the public; Upjohn was and has remained to the present day an ethical house.

The buyer's label business and the broadening of the company line increased volume and compelled expansion of plant facilities, but brought little profit, for the drug business was fiercely competitive and profit margins on standard items were small or nonexistent. What was needed was a specialty, i.e., a product sufficiently useful and distinctive to command a substantial sale at an adequate price.

Several specialties, such as a cough syrup with a pleasant flavor and a catchy name, were made up, but they fell short of what was required. Then, one day in 1907, something really striking turned up. German chemists discovered that phenolphthalein, a tasteless compound previously known only as an obscure laboratory reagent, was a cathartic. One U.S. firm already had a tasteless laxative tablet, with phenolphthalein as the active ingredient, on the market. At Upjohn, the first thought was to add the new ingredient to Upjohn's existing compound cathartic pill.

The proposal was vetoed by Dr. Will. "Why not," he asked, "a flavored wafer to provide a pleasant-tasting laxative?" The result was Phenolax, the pink, mint-flavored laxative wafer that for three decades could be found in nearly every household in the U.S. (although it was not advertised to the public except for the use of drugstore displays).

Control and Research

The development of Phenolax not only restored The Upjohn Company to financial health, but made possible the strengthening of every department, from production to sales, and the introduction of two of the most characteristic features of the modern pharmaceutical firm—the control laboratory and the research department.

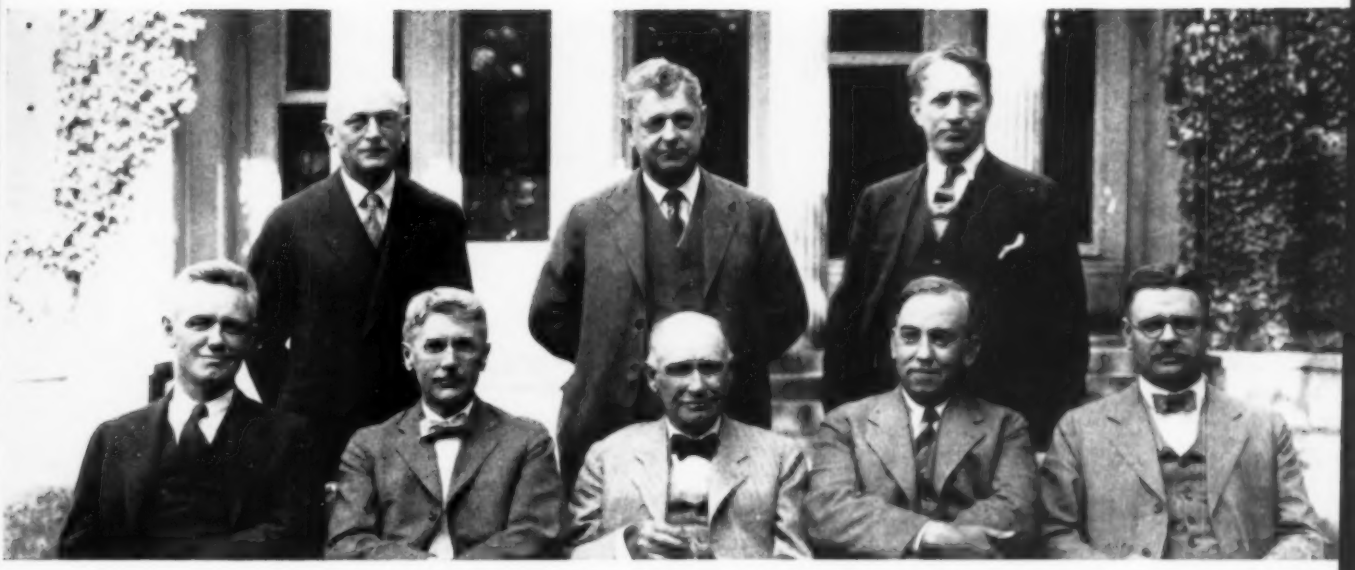
Upjohn's present elaborate control facilities and its research division—one of the largest and most comprehensive chemical and biological research units to be found anywhere—both date to the hiring of F. W. Heyl, Upjohn's first Ph.D. chemist, in 1913. Dr. Heyl was directly responsible for Upjohn's next major product, the first standardized, guaranteed-potency whole-leaf digitalis; and most Upjohn products since have originated, wholly or in part, in the Upjohn research laboratories. Today the company is one of the largest U.S. producers of drugs and medicines.

In the 19th century and the early years of the 20th, the head of a business firm was expected to act like the head of the firm—and Dr. Will did. He was a strong believer in the teamwork on which so much stress is laid today; but he never let anyone doubt who was captain of the team.

He neither slapped backs nor dressed anyone down. He kept his own counsel and made his own decisions. Old employees recall a characteristic pose: feet spread apart, body tilted slightly forward, a disapproving finger pointing silently toward something he wished corrected. This was usually sufficient to obtain what he wanted; if he felt he had to speak of something, he spoke of it just once.

Religion and Bank Reform

Dr. Will was possessed of great reserve, in part as a result of shyness. He had many interests and spoke well on many subjects, but found it hard to get started in large gatherings. He preferred to talk to people one at a time.



Upjohn (seated, center) and branch officers posed for photo during 1926 conference.

He was a believing Christian, but was strongly opposed to sectarianism. On one occasion, he argued so convincingly against sectarianism that a young minister of the Upjohns' acquaintance was persuaded—to Dr. Will's complete surprise—to resign the cloth.

One of Dr. Will's interests was bank reform. Shortly after 1900, he devised a plan for insuring savings deposits, which he described in a speech, afterwards published in a pamphlet, before a bankers' convention. The essence of his scheme was the establishment of a central fund, financed by levying one-half percent a year on savings deposits, to insure accounts up to a limit of $10,000 each. This plan differed in only one respect from our present-day deposit insurance scheme. Where his proposal called for a bank-owned corporation to administer the fund, the U.S. deposit insurance program is managed by the Federal Deposit Insurance Corporation, a government corporation.

Another of Dr. Will's interests was municipal affairs. Around the turn of the century, he sat on the Kalamazoo City Council. Ten years later, while president of the Kalamazoo Chamber of Commerce, he organized a campaign for the commission-manager form of government—an elected mayor and commission or council to make municipal laws and policy, a non-political city manager to direct police, fire and other executive departments of the city government.

The campaign resulted in the appointment of a committee, with Dr. Upjohn as chairman, to draft a new charter. When the charter went before the voters, not only was it approved by a large majority; the doctor was elected the first mayor of Kalamazoo under it.

He also had advanced ideas on wages and hours. At a time when the ten-hour day, six-day work week was still widespread and when Phenolax and prosperity were still well in the future, he made Saturday a half-holiday in the Upjohn plant and offices. Several years later, despite objections from other employers in the Kalamazoo area, he reduced the company work day to eight hours.

One reason for Dr. Upjohn's advocacy of shorter work hours was a belief in the need for leisure and in the constructive use of leisure.

As a result, he gave generously to provide cultural and recreational facilities for Kalamazoo. He provided funds for building a civic auditorium; he gave the city a park; he improved the public golf course. He gave—often anonymously—to hospitals, churches and welfare agencies, and he established the Kalamazoo Foundation for general philanthropic purposes.

A Real Bargain

For all his experience in business and public affairs, however, the head of The Upjohn Company retained many of the attitudes of the farmer. For example, he had the farmer's love of a bargain. He drove one of the first cars in Kalamazoo. But it didn't occur to him to buy a new car in order to have one of the first in town. He acquired it from a local merchant who had bought it and then was afraid to drive it.

Another attitude retained from his farm childhood was a deep love of the land. In 1895, he purchased 40 acres of farmland near Kalamazoo, intending to operate a creamery. When that proved unsuccessful, he replaced the creamery with a summer home and converted the farm—which he soon enlarged by the purchase of additional land—into a handsome farm-estate called Brook Lodge.

One of his particular passions was raising flowers. Soon after the construction of his summer place, he attempted to grow irises on it. When the soil proved unsuitable, he switched to lilies, then poppies, and finally to peonies, which he grew with outstanding success. At one time, he had 40 acres of peonies—698 varieties in all, which he described in detail in a book he wrote.

Dr. Upjohn made it an invariable rule to be at Brook Lodge when the peonies bloomed. In his later years, he had a winter home in Pasadena, California, but otherwise he traveled little. In fact, he was prevailed upon to go abroad only once. On that occasion, a tour of Europe with friends, he abruptly left the party halfway through the trip in order to be back in Kalamazoo for the blooming of his beloved flowers.

He likewise had the strong family loyalty that was characteristic of 19th century rural America. However distant, relatives could count on a job in The Upjohn Company (though none were given jobs beyond their ability; Dr. Will was pretty sharp about that). And it was his express wish to be succeeded in the business by his son, W. Harold Upjohn.

Wish Not Fulfilled

Unfortunately, his wish was not to be fulfilled. Harold Upjohn, who joined the company in 1907, possessed marked ability and made substantial contributions to the development of the company, especially in such fields as cost analysis (a major problem in chemical and pharmaceutical firms). By the mid-1920s, he was general manager of the company, and Dr. Will—now past 70—was to be found in his office less and less. In 1928, however, Harold died following an operation for hernia.

This compelled Dr. Upjohn not only to resume active direction of the firm, but to make new provision for a successor. He set about this in characteristic fashion. To assure young blood for the more distant future, he in 1930 persuaded his son-in-law, Donald S. Gilmore, present chairman of the board and managing director, to leave the Gilmore family business, a well-known Kalamazoo department store, and enter The Upjohn Company.

To solve the immediate problem, he asked several of the senior executives of the firm to send carbon copies of their company correspondence to him at Pasadena the following winter. When he returned to Kalamazoo that spring, he announced his decision, as chief stockholder as well as chief executive officer of the firm, that his nephew, Dr. Lawrence N. Upjohn—Dr. Henry's son—was to be the new president.

Last Years

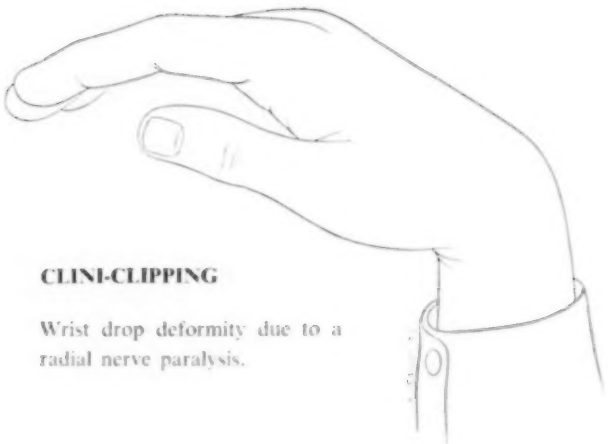
The last years of Dr. Will's life coincided with the start of the Great Depression. The Upjohn Company was surprisingly little affected; important new products, such as high-potency vitamin preparations, kept the business

on an even keel. But Dr. Upjohn was deeply concerned over the level of unemployment in the Kalamazoo area, and he purchased and equipped 2000 acres of land near the city for subsistence farming by unemployed Kalamazoo residents.

This was one project, though, that he was not to complete. He died of a heart ailment at Brook Lodge on October 18, 1932.

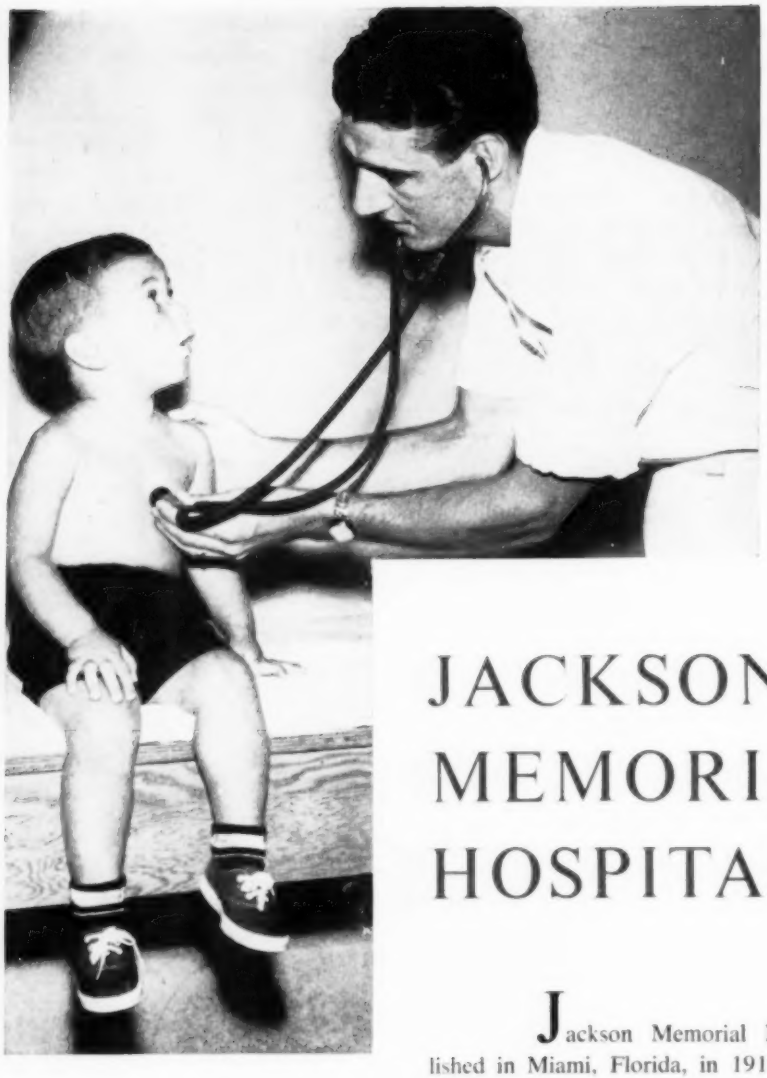
The Upjohn Company has changed in many particulars since Dr. Will's death. Most of its products were unheard of in 1932. Just outside Kalamazoo, it has a spotless new plant which is one of the industrial showplaces of the U.S. The old downtown plant area is dominated by a Research Tower, the home of Upjohn's large research department. But in one respect the company has not changed. Although it was recently converted to a publicly-held corporation, members of the family own the majority of the stock and are still closely identified with the firm that bears their name.

NEXT MONTH—*the story of a family enterprise, the A. H. Robins Company.*



CLINI-CLIPPING

Wrist drop deformity due to a radial nerve paralysis.



A county hospital, affiliated with the University of Miami School of Medicine, this 1000-bed center handles an average of 500 staff out-patients daily, as well as 225 emergencies.

ONE OF A SERIES

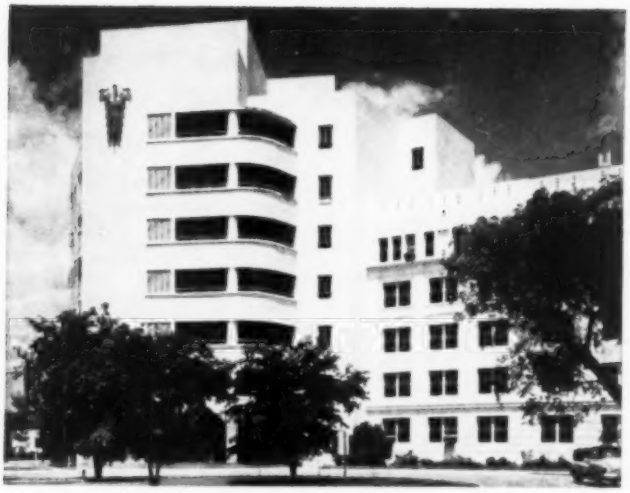
ON LEADING MEDICAL CENTERS

JACKSON MEMORIAL HOSPITAL

Jackson Memorial Hospital was established in Miami, Florida, in 1910 as a city hospital. Since that time it has grown progressively to meet the service requirements of the growing metropolitan area of Greater Miami.

The two most recent developments of the hospital were in 1949 when the hospital was reorganized and transferred from City of Miami to Dade County control, and in 1951 when, by written agreement between the Dade County Commission and Trustees of University of Miami, Jackson Memorial Hospital was made the teaching hospital for the recently organized University of Miami School of Medicine.

The agreement between the County and University



Main entrance to Jackson Memorial Hospital's central building.

briefly states that the County will provide a hospital suitable for care of indigents of the county, provide for the essential teaching facilities for the medical school, and operate this facility providing personnel, equipment and financial support.

The University provides medical care of medical indigents both inpatients and outpatients and in turn utilizes the hospital facilities and patients for teaching and clinical research.

From a small beginning in 1917 at its present site, Jackson Memorial Hospital has grown to approximately 1,000 beds and bassinets, with an additional 400 beds and supporting facilities being added at the present time. As a general hospital all types of services are offered. The general organization, under Executive Director Kermit H. Gates, M.D., includes usual administrative divisions with nine major professional departments—mainly Surgery, Medicine, Pediatrics, Obstetrics-Gynecology, Psychiatry, Pathology, X-ray and Anesthesiology.

Facilities

At the present time Jackson Memorial Hospital has 987 beds and 86 bassinets. These beds are divided as follows: psychiatric service 108 beds, pediatric (including 86 bassinets) 186, obstetrics-gynecology 125. The remainder are divided between medicine and surgery, with the subspecialties having appropriate assignment of beds within the general allotment to medicine and surgery.

Beds within medicine and surgery include isolation beds, tuberculosis beds (short term care only), a general medicine section, cardiology, neurology, dermatology, endocrinology, gastroenterology, and other specialties related to medicine. In surgery the sub-allotments include general surgery, orthopedics, ophthalmology, otolaryngology, neurosurgery, urology, and similar subspecialties within the surgical field.

These beds are divided 40% for private patients and 60% for staff (charity) patients. Approximately 20% of the total number of beds are utilized by colored patients.

Patient beds are contained, along with supporting laboratory and radiological department, physiotherapy, and other facilities, in four main buildings, all connected or merged one into another, mainly Woodward Building, Skaggs Building, Central Building and Colored Hospital Building. The Institute, connected by corridor, contains the psychiatric service; and a separate Chest Building, also connected by corridor, houses 83 beds for medical chest cases.



Entrance to Jackson's modern outpatient clinic.

New Construction

Buildings under construction are as follows:

- An Emergency Service Building which will be capable of handling 350 emergencies per day with 38 observation beds and 25 detention beds for police cases.
- A new patient wing to contain administration, pathological laboratories, 23 surgical recovery beds, 22 intensive treatment beds, 41 pediatric beds, 40 EENT beds and 108 general medical and surgical beds for private patients.
- An additional floor on the Isolation Building to contain 46 beds for care of various types of communicable disease cases.
- Mental Health wing to furnish outpatient space, psychotherapy treatment areas and mental rehabilitation, and 26 beds for night care to supplement day care of the outpatient and rehabilitation areas.

Additional supporting facilities are a morgue with anatomical demonstration areas for the house staff, addition to Medical Record facilities, an x-ray therapy building to house a cobalt unit, the extension of clinical laboratory and diagnostic x-ray facilities, an extensive automatic pneumatic tube system, and a nurses education building consisting of large air conditioned classrooms.

Housing Expands

Student housing facilities are being enlarged by adding five stories on an existing nurses home (Royce Building) for the student nurses, and modernization of an existing nurses home on the hospital grounds for the house staff.

The new house staff quarters will consist of 86 single rooms with connecting or adjacent bath, and air conditioned rooms for reading and music. Game room areas for pool and ping pong will be available on the third floor. Interspersed within the building will be lounging areas. Individual phones will be placed in each room.

The University of Miami School of Medicine is building the first section of a $6 million medical school building adjacent to the outpatient clinic building and the School of Nursing. This section will be eight stories, designed primarily for research activities of the school.

Clinical Material

There is an abundance of clinical material at Jackson, which increases yearly. The hos-

pital has a staff outpatient clinic that averages in excess of 500 staff outpatients daily among some forty clinics held weekly.

The emergency service is contained in a separate building where an average of 225 emergencies from the Greater Miami area are seen daily. Ambulance service is furnished from local services outside the hospital and the house staff is not required to make ambulance calls or leave the hospital to treat patients.

The inpatient service has increased each year for the past several years in proportion to the increase of population of Greater Miami area. This number will be increased within the year with the completion of the facilities housing 400 new beds.

During the twelve month period ending April 30, 1958 the average daily inpatient census was 829. There were 35,609 patients discharged and 302,658 patient days. Of these 107,301 were private hospital days, 185,752 staff and 9,605 part pay. All staff and part pay and some private patients are used for teaching.

During the year ending April 30, 1958 a total of 122,782 visits were made to the outpatients clinics and 82,408 treatments were given in the Emergency Department. There were 11,933 surgical operations and 5,668 births. Deaths numbered 1,650 and of these 706 or 42.8% were autopsied.

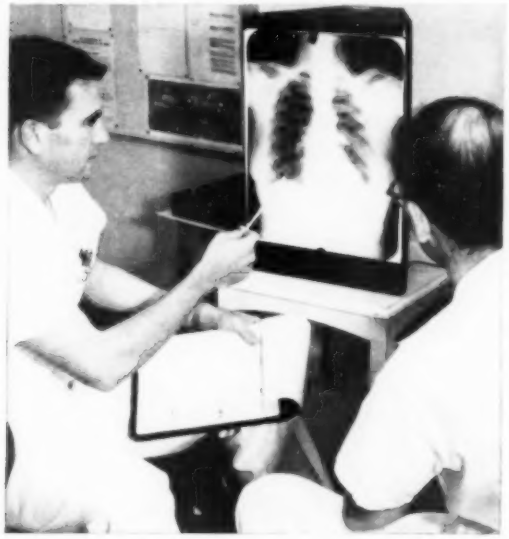
Laboratory

The hospital has a well organized clinical laboratory and pathology department directed by the Chairman of the Department of Pathology, University of Miami School of Medicine.

The X-ray Department has complete facilities for all diagnostic and therapeutic procedures including the use of radium and isotopes. This department is supervised by the Chairman of the Department of Radiology, University of Miami School of Medicine. Three full time qualified radiologists are available at all times. All are Diplomates of the American Board of Radiology and all hold



Above — among silent helpers at Jackson Memorial is this automatic laboratory analyzer.



Left — viewbox sessions develop staff doctors' proficiency in x-ray reading.

teaching appointments in the University of Miami School of Medicine.

Other laboratory services, such as Heart Station for electrocardiagraphy and cardiac catheterization work are available, an electroencephalography, pulmonary function laboratory and many other special laboratory services are supported. An autoanalyzer made by Technicon has been added to the laboratory. This automatic laboratory assistant is calibrated for use with ureas, calciums, and sugars. Readings are recorded automatically by a photoelectric cell which is sensitive to intensity color changes. For the year ending April 30, 1958 a total of 607,003 clinical laboratory procedures were performed in the clinical laboratory. A total of 15,113 electrocardiograms and 1,721 electroencephalograms were completed.

Ward rounds are made with members of the faculty, attending and resident staffs on the particular service to which assigned. The house staff is expected to present cases and enter into the discussions at the regular weekly clinic meetings and occasionally before the meetings of the general staff. Clinical correlation conferences are held weekly and members of the resident staff are expected to attend and take part unless kept away by official duties.

Library

The University of Miami School of Medicine has a medical library in the hospital. There are 9,628 books, 12,257 bound journals and approximately 268 pamphlets. Number of periodical subscriptions is 617. The members of the resident and intern staff have full use of the library.

The Medical Staff consists of full time staff, voluntary attending staff, courtesy staff and house staff.

There are 76 full time clinical medical staff members of the University of Miami School of Medicine, with 617 voluntary attending men appointed by the Medical School from among the practitioners of the Greater Miami area. There are 267 courtesy staff members with 67 interns and 176 residents. As the number of beds are increased by new construction the total number of house staff will be increased accordingly.

Jackson Memorial Hospital is located in Miami proper. Miami is noted for all forms of sports and recreation. Fishing, beach bathing, boating and water skiing are available. There are many golf courses within the city. During Christmas and New York season there is a ten day festival with parades, pageants, parties, all topped by an intersectional football game in the Orange Bowl on New Year's Day. Some of the finest plays, operas and musicals are booked at the Dade County Auditorium each year, which is located near the hospital.

In this rapidly growing area Jackson Memorial Hospital is also expanding. The County Commission has secured fifty acres of land adjacent to the hospital with a policy of developing a medical center around Jackson Memorial Hospital.

Two rehabilitation centers have been recently established in this area. Three hospitals are projected with all the area dedicated toward the growth of this large medical center of the South.





INVESTING FOR THE SUCCESSFUL PHYSICIAN

Prepared especially for Medical Times by C. Norman Stabler, market analyst of the New York Herald Tribune.

BONDS VERSUS STOCKS

One explanation for the recent boom in stocks, at the expense of bonds, is inflation. It is not the only one, but at least it is one about which the investing public has heard much of late. It is based on the argument that, with currencies tending to depreciate, an equity is a better hedge than is a debt obligation that calls for eventual payment in a stated amount.

Bonds of solvent companies are paid in full at maturity in the prevailing dollars. During their lifetime bonds pay interest regularly, generally in semi-annual instalments.

A $1,000 bond due 20 years hence will be paid off at $1,000, but there is no guarantee that the $1,000 of 1979 will be equal in purchasing power to the $1,000 of 1959.

The brokerage firm of Francis I. du Pont holds that the preference for stocks over bonds for preserving real capital is of long duration. It worked out two examples—one stocks and one bonds — over 46 years. It explains as follows:

"It is assumed that $100,000 was invested in each of two accounts in 1913.

"One of these portfolios consisted solely of common stocks. This fund, originally $100,000 would today be worth over $460,000 in terms of purchasing power. That means it has a value more than 360 percent in excess of its worth 46 years ago."

The Bond $100,000 was invested in one railroad issue, and corrected for purchasing power, has never once reattained the 1913 worth.

"And today," the firm adds, "the value is less than 10 percent of the corresponding figure for the fund invested in stocks over the last 46 years."

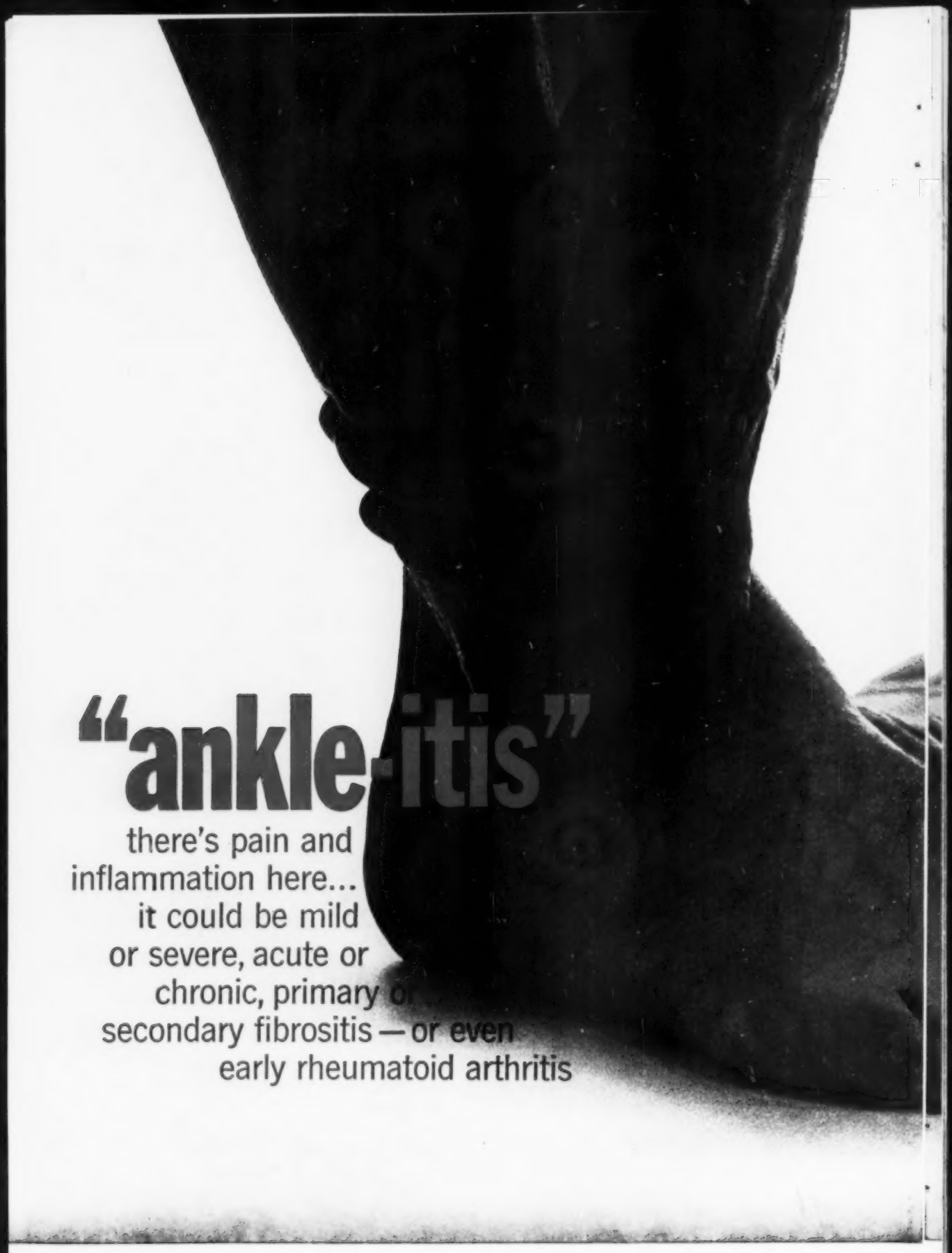
Assuming the dollar is worth $1.00 in 1947-1949 prices, the basis of the consumer price index, it is worth 80.7 cents today. On that same basis it would have been worth $2.36 in 1913.

"There have been two underlying factors that, over the years, have continually favored stocks over bonds," the firm says. "These are the historical decline in the purchasing power of the dollar, and the long-term uptrend in shares of American industry.

"The moral of this story is that all is not gold that glitters and all is not safe that is fixed."

A bond is a debt of the issuing company—often a mortgage on the property. A stock is an equity in the company—ownership. If the dividend is passed on the stock, nothing happens.

If a company defaults on its bonds it usually is thrown into receivership and the bondholders get first lien on assets.


"ankle-itis"
there's pain and
inflammation here...
it could be mild
or severe, acute or
chronic, primary or
secondary fibrositis — or even
early rheumatoid arthritis

more potent and comprehensive treatment than salicylate alone

. . . assured anti-inflammatory effect of low-dosage corticosteroid[1] . . . additive antirheumatic action of corticosteroid plus salicylate[2-5] brings rapid pain relief; aids restoration of function . . . wide range of application including the entire fibrositis syndrome as well as early or mild rheumatoid arthritis

more conservative and manageable than full-dosage corticosteroid therapy—

. . . much less likelihood of treatment-interrupting side effects[1-6] . . . reduces possibility of residual injury . . . simple, flexible dosage schedule

THERAPY SHOULD BE INDIVIDUALIZED

acute conditions: Two or three tablets four times daily. After desired response is obtained, gradually reduce daily dosage and then discontinue.

subacute or chronic conditions: Initially as above. When satisfactory control is obtained, gradually reduce the daily dosage to minimum effective maintenance level. For best results administer after meals and at bedtime.

precautions: Because SIGMAGEN contains prednisone, the same precautions and contraindications observed with this steroid apply also to the use of SIGMAGEN.



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corticoid salicylate compound tablets

Composition

METICORTEN® (prednisone)	0.75 mg.
Acetylsalicylic acid	325 mg.
Aluminum hydroxide	75 mg.
Ascorbic acid	20 mg.

Packaging: SIGMAGEN Tablets, bottles of 100 and 1000.

References: 1. Spies, T. D., et al.: J.A.M.A. 159:645, 1955. 2. Spies, T. D., et al.: Postgrad. Med. 17:1, 1955. 3. Gelli, G., and Della Santa, L.: Minerva Pediat. 7:1456, 1955. 4. Guerra, F.: Fed. Proc. 12:326, 1953. 5. Busse, E. A.: Clin. Med. 2:1105, 1955. 6. Sticker, R. B.: Panel Discussion, Ohio State M. J. 52:1037, 1956.

Schering

A TEN-YEAR PERFORMANCE

In an effort to demonstrate the difficulty of trying to participate in the stock market on the basis of a few individual stocks, the Boston firm of Vance, Sanders & Co., representing Massachusetts Investors Trust and several other major open-end mutual funds, compiled a table of the ten-year experience of the thirty stocks used in the Dow Jones industrial index.

It will be noted there was over 1,200 percentage points difference between the stock that performed best and the one that did the poorest. In terms of dollars, if a person had invested $1,000 in Goodyear Tire & Rubber ten years ago the value of the investment at the end of 1958 would have been $13,109. Those who put $1,000 in Chrysler at the same time would now have $983.

The table is shown on the opposite page.

THE REVENUE CRISIS

Uncle Sam is not the only one in our fair land that is steadily going deeper and deeper into debt. The smaller governmental units, states, counties and towns, also tend to spend more than they raise through taxes, thus facing the necessity of continued borrowing.

"Politicians and public officials, and to a lesser extent the people themselves, now realize that the voters have been demanding more government services and government projects than they are willing to pay for," says L. O. Hooper, analyst for W. E. Hutton & Co.

"The bills are coming in, and revenue has to be raised to pay for them. The resources of families in the lower tax brackets (where votes are more numerous) have to be tapped.

"So a general protest against higher taxes, and even against present taxes is developing.

"The only way public officials can meet this protest, and meet it they must, is to shrink rather than increase services and postpone or abandon many 'desirable' and 'desired' new projects."

In the long run, he believes this state of affairs could have an effect on business conditions.

If business should be cut back by reductions in spending by governments the stock market eventually would feel the pinch.

Another thing that could haunt the market would be a sweetening of government bond offerings by higher interest to make them desirable as investments. If this were brought about through government aid in raising the ceiling on interest rates, the market also might suffer some competition.

If the government were again able to sell long-term government bonds to investors rather than to commercial banks, one of the big inflation forces would be lightened. This would tend to take away the inflation urge in stock buying that was such a potent factor in last year's market rise.

CHANGING PATTERNS IN AUTOS

The automobile industry appears to face an upturn in the next year or two and highlighting the change is the swing to the compact-car. The entry of the Big Three into this field, that is comparatively new in America but not in Europe, means that competition will be even more severe than it has been in the past.

William Kurtz, of Paine, Webber, Jackson & Curtis, in a recent survey of the industry, says the decision of the Big Three confirms a trend that already had been reshaping the industry's sales pattern.

Imported and domestic small cars accounted for 13 percent of automotive sales last year

TEN YEARS WITH THE DOW JONES INDUSTRIAL INDEX

STOCK		% INCREASE OR DECREASE
GOODYEAR TIRE & RUBBER	+	1,210.9%
UNITED STATES STEEL CORP.	+	726.5
INTERNATIONAL PAPER	+	651.2
TEXAS COMPANY	+	555.5
BETHLEHEM STEEL CORP.	+	547.1
UNITED AIRCRAFT CORP.	+	527.1
GENERAL ELECTRIC	+	504.8
EASTMAN KODAK CO.	+	407.7
GENERAL MOTORS CORP.	+	405.5
STANDARD OIL CO. (N.J.)	+	389.0
E. I. DUPONT DE NEM.	+	363.4
STANDARD OIL CO. (CAL.)	+	332.0
GENERAL FOODS CORP.	+	277.4
PROCTER & GAMBLE	+	242.7
DOW-JONES INDUSTRIAL AVERAGE	+	229.2
SEARS, ROEBUCK & CO.	+	210.9
UNION CARBIDE & CARBON CORP.	+	206.7%
CORN PRODUCTS REFINING CO.	+	194.7
INTERNATIONAL NICKEL CO.	+	194.2
WESTINGHOUSE ELECTRIC CO.	+	191.0
JOHNS-MANVILLE CORP.	+	172.7
NATIONAL STEEL CORP.	+	152.5
AMERICAN CAN CO.	+	146.3
ALLIED CHEMICAL & DYE	+	123.8
AMERICAN SMELTING & REF. CO.	+	78.7
NATIONAL DISTILLERS PROD. CO.	+	70.0
AMERICAN TOBACCO CO.	+	56.8
INTERNATIONAL HARVESTER CO.	+	56.1
AMERICAN TEL. & TEL.	+	49.8
F. W. WOOLWORTH CO.	+	17.7
CHRYSLER CORP.	—	1.7

and are expected to account for 18 percent of industry volume in 1959. This shift in demand towards an economy-type, functional car conflicts with the historic industry merchandising program of selling larger and more expensively-styled passenger cars.

"As a result," he says, "medium-priced cars have slumped in the last two years and will be hit even harder when the 'majors' introduce their compact-car models. Moreover, the virtual monopoly now enjoyed by imported cars and by American Motors 'Rambler' and Studebaker Packard's 'Lark' will give way to a keenly competitive market."

On the basis of assuming only a normal recovery from last year's sharp decline, the industry should produce 5.0 to 5¼ million cars this year, he believes. New model changes, combined with introduction of compact cars by the major companies, may produce a 6-million-car year or better in 1960. Accordingly, a two-year recovery period seems likely. Competition, however, will be keener than ever before.

MOWING, BY REMOTE CONTROL



The lawn mower industry has the stores well stocked to satisfy the needs of Suburbia. Last year it sold $300,000,000 in grass cutters, up 240 percent from the paltry $90,000,000 sold in 1950, and it's hoping to do better this year, at least by 4.9 percent.

William H. Nolan, marketing executive for Moto-Mower, Ind., ascribes the industry's boom partly to the exodus to the suburbs since the war.

"Over the years increases in personal incomes, leisure time and interest in yard care did their bit to sharpen the industry's sales ascent even further," he said.

He estimates there are some 15 million mowers in use today and that another six million would saturate the market. However, he added, replacement demand is fast enough in this field to "keep our sales charts humming."

Ten years ago, he noted, the industry consisted of 30 to 40 manufacturers. Today some 300 firms are turning out mowers, and the list keeps growing.

The trend in recent years, and one which helped the mower boom to gather momentum, is toward the gas-powered rotary. Mr. Noland said power mower sales now far exceed those of hand mowers with roughly 11 out of 12 sold last year of the power variety.

Moto-Mower, a subsidiary of Detroit Harvester Co., is working now to satisfy the whims of a fickle market 10 years hence.

"A remote-controlled mower that can cut grass, plow snow and dispense fertilizer is in the works," he said.

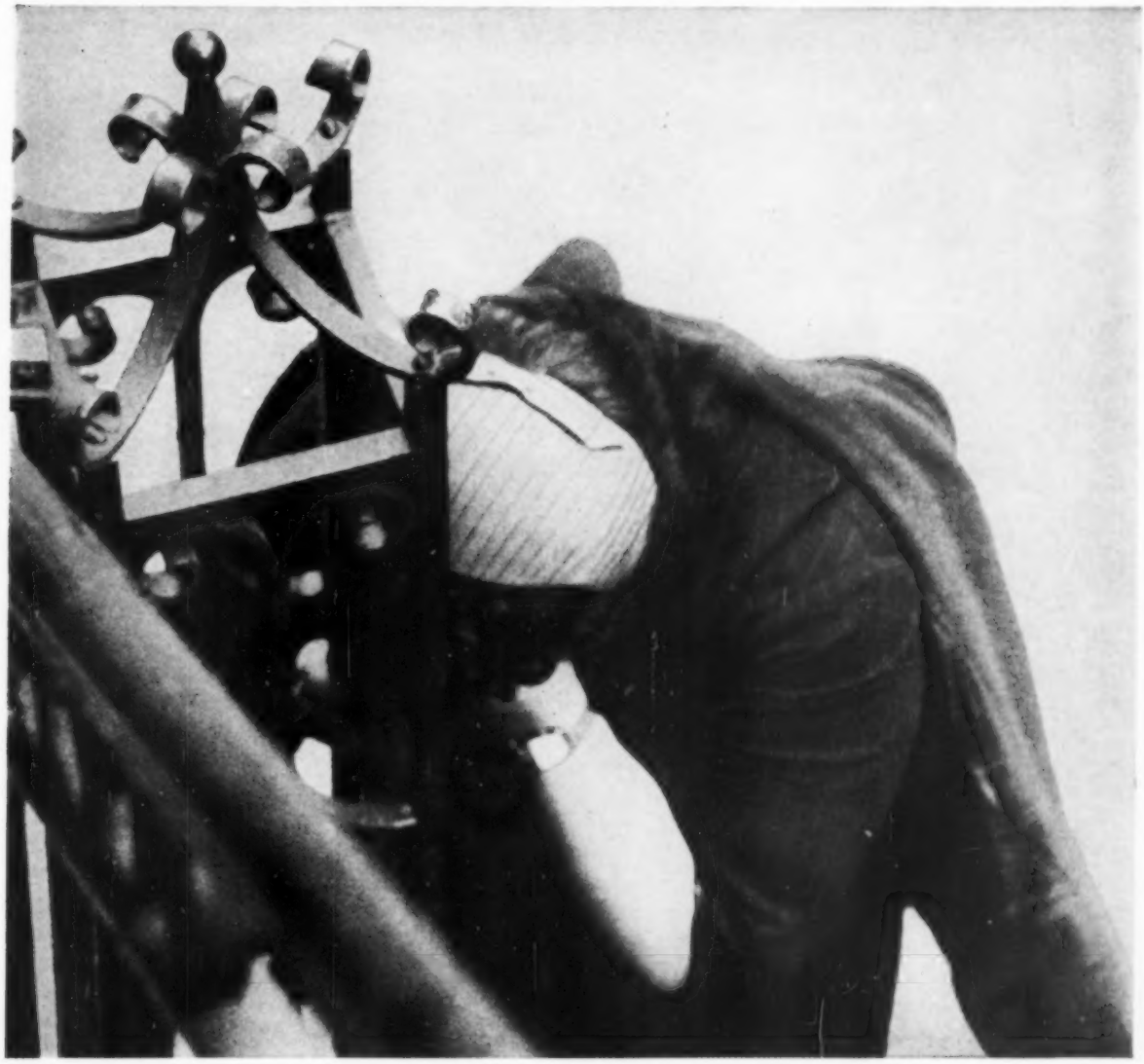
He added that although the automatic mower is still some years away many of its engineering principles have already been proved in the laboratory.

The mower of tomorrow as visualized by Moto-Mower's research engineers is a remote-controlled automation device whose cutting pattern and direction of movement are prerecorded on magnetic tape," Nolan explained.

"With the twist of a dial a homeowner can either take to the chaïse lounge or turn to some other chore he never had time for in the past."

The information set forth herein was obtained from sources which we believe reliable, but we do not guarantee its accuracy. Neither the information nor any opinion expressed constitutes either a recommendation or a solicitation by the publisher or the authors for the purchase or sale of any securities or commodities.

WHEN BLOOD PRESSURE MUST COME DOWN...



When hypertensive symptoms such as dizziness, headache and fainting are frequent enough and severe enough to interfere with your patient's activity and safety—then it is time to consider the beneficial actions of Serpasil-Apresoline. Both Serpasil and Apresoline lower blood pressure. When the Serpasil-Apresoline combination tablet is prescribed, blood pressure response is even better. In addition, Serpasil contributes favorable calming and heart-slowing effects. Apresoline increases renal blood flow, decreases cerebral vascular resistance and inhibits the actions of humoral pressor agents. Combined with Serpasil, Apresoline is effective at a lower dosage, thus side effects are rarely a serious problem.

SUPPLIED: *Tablets* #2 (standard-strength), each containing 0.2 mg. of Serpasil and 50 mg. of Apresoline. *Tablets* #1 (half-strength), each containing 0.1 mg. of Serpasil and 25 mg. of Apresoline. *Samples available on request.*

Serpasil®-Apresoline®
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2/2040 MS

CIBA SUMMIT, NEW JERSEY

GUIDE FOR INVESTORS

Based on recommendations of the Securities and Exchange Commission in cooperation with the New York Stock Exchange, American Stock Exchange, National Association of Securities Dealers and others.

1. Think before buying, guard against all high pressure sales.

2. Beware of promises of quick spectacular price rises.

3. Be sure you understand the risk of loss as well as prospect of gain.

4. Get the facts—do not buy on tips or rumors.

5. Give at least as much thought when purchasing securities as you would when acquiring any valuable property.

6. Be skeptical of securities offered on the telephone from any firm or salesman you do not know.

7. Request the person offering securities over the phone to mail you written information about the corporation, its operations, net profit, management, financial position and future prospects.

THE SPACE AGE

Dreams of outer space once were the sole property of small boys who read fantastic thrillers about trips to Mars, with time for lunch on the moon. These dreams are steadily taking on more plausibility.

The "American Investor" magazine of the American Stock Exchange recently outlined a few developments, all of which were announced within the space of three or four weeks.

● "U.S. Bureau of Mines scientists announced they had made the world's first casting of molybdenum. The government hailed it as a 'major metallurgical breakthrough.' The Bureau's researchers believe the 'breakthrough' will contribute importantly to the nation's conquest of space. Molybdenum strengthens steel and resists heat, the most formidable barrier to higher speeds.

● "Five days after this announcement, the new National Aeronautics and Space Administration placed an order with the McDonnell Aircraft Corporation of St. Louis for the nation's first space capsule to carry a man. The capsule will be launched by a missile, and will go into orbit with its lone, but probably not lonesome, passenger 100 miles or more above the earth. This, it is explained, marks an intermediate but vital step in conquest of space.

● "Atomic Energy Commission scientists demonstrated an atomic power generator weighing only five pounds. The baby-sized battery uses a radioisotope as fuel, is small enough to be held in a man's hand, and will generate up to five watts of electricity for nearly a year without refueling. 'This,' said the AEC, 'is a significant breakthrough.'

● "The U.S. Navy, from its ordnance test station in China Lake, California, reported the development of a new rocket engine capable of being throttled down. The new engine, said Douglas D. Ordhal, in charge of missile activities, promises to give the control needed to 'make a feather-soft landing on the moon and take off again.' Also, it means that 'we can bring manned satellites back from orbit without damage by controlling direction and speed as they re-enter the atmosphere.'"



when your patients tell you:
"I can't sleep," your
reliable, conservative answer is

NOCTEC

NOCTEC

GENERAL PRACTICE "The general practitioner likes it . . . can be given to patients of all ages and physical states"

CARDIOLOGY "patients with cardiac disease . . . no proof that it is deleterious to the heart"

DERMATOLOGY "frequently the favorite of the dermatologist . . . skin reactions [rare] if any unpleasant"

PSYCHIATRY "The psychiatrist often finds it the agent of choice . . . much less likely to produce mental excitement"

SQUIBB

HIGHLIGHTS FROM THE A.M.A. COUNCIL ON DRUGS

REPORT ON TRIAMCINOLONE

J.A.M.A. 169:257 (January 17) 1959.

"It (triamcinolone) has an anti-inflammatory potency greater than an equal amount of prednisolone; i.e., comparable suppressive effects may usually be achieved with lower doses of triamcinolone than with prednisolone."

"Triamcinolone lacks the sodium-retaining and edema-producing effects of most other glucocorticoids. During the first several days of administration, it may cause a loss of sodium from the body; an initial mild diuretic action is frequently observed, whether the patient is frankly edematous or not. This is in contrast to the definite sodium-retaining and fluid-retaining properties of cortisone and hydrocortisone and to a much lesser extent with prednisone and prednisolone."

"Except in exceedingly large doses, triamcinolone apparently has no consistent effect on potassium excretion. Hence, neither sodium restriction nor potassium supplementation is ordinarily required during therapy with this agent."

"As with other glucocorticoids, the long-term administration of triamcinolone results in definite catabolic effects, as indicated by impairment of carbohydrate utilization and negative protein and calcium balance. This catabolic effect, coupled with a lack of appetite stimulation which is apparently peculiar to triamcinolone, may produce weight loss that might be undesirable in some patients treated for long periods of time."

"...the voracious appetite, with weight gain and euphoria, characteristic of other steroids, is not seen with administration of triamcinolone."

"Triamcinolone has been used for the management of a wide variety of clinical conditions usually considered amenable to systemic steroid therapy. These have included rheumatoid arthritis and other collagen diseases, allergic and dermatological disorders, certain leukemias and malignant lymphomas, the nephrotic syndrome, pulmonary emphysema and fibrosis, acute bursitis, rheumatic fever, and certain blood dyscrasias. Although clinical experience with the drug in some of the foregoing conditions is not extensive, the many similarities in action between triamcinolone and other potent glucocorticoids would indicate a usefulness for triamcinolone akin to that of other agents of this class."

"There is some evidence that triamcinolone is more effective at a smaller dosage than are other steroids in controlling both the skin and joint lesions in psoriasis, whether or not complicated by arthropathy."

"Triamcinolone appears to compare favorably with other steroids for use in those situations in which edema and sodium retention have been complicating problems."

"It [triamcinolone] may also be the steroid of choice for patients in whom psychic stimulation, euphoria, voracious appetite, and weight gain should be avoided."

"... the drug [triamcinolone] does produce the other side effects and untoward reactions common to the glucocorticoids. At therapeutically equivalent doses, the frequency and severity of clinical manifestations of hyperadrenalism — rounding of the face, fat deposition, and hirsutism — are essentially the same. Likewise, there is little indication that the relative incidence of osteoporosis is materially decreased after the long-term use of the drug."

"Triamcinolone apparently does not cause the euphoria sometimes seen with other steroids, and the occurrence of mental depressions is uncommon."

"Current evidence suggests that the drug [triamcinolone] may not produce as high an incidence of peptic ulcer as do other steroids."

"Cutaneous erythema seems to be a side effect peculiar to triamcinolone."

"The usual contraindications and precautions of glucocorticoid therapy should be followed in the use of triamcinolone, keeping in mind that prolonged therapy with this drug will suppress the function of the patient's own adrenals by interfering with the pituitary-adrenal axis."

Aristocort®

Triamcinolone LEDERLE

Supplied: 1 mg. scored tablets (yellow)
2 mg. scored tablets (pink)
4 mg. scored tablets (white)

Lederle LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

NOW—YOU CAN GET THE
UNSURPASSED ADVANTAGES
OF ARISTOCORT
IN SALICYLATE
COMBINATION

Arist

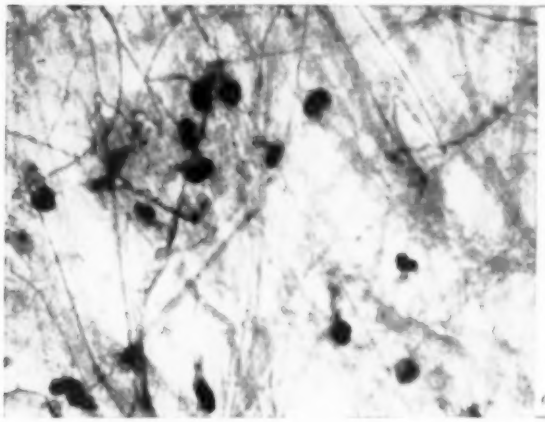
Aristogesic combines the *anti-inflammatory* effects of Aristocort® Triamcinolone with the *analgesic* action of a most potent salicylate. This means that the dosage of each is *substantially lower* than that ordinarily required for each agent alone. With Aristogesic the physician has exceptionally wide latitude in adjusting the dosage to the lowest effective level.

The possibility of gastric distress from either salicylamide or corticosteroid is minimized because of lower dosage required. This is further reduced by the buffer action of aluminum hydroxide. And the ascorbic acid helps meet the increased need for this vitamin in stress conditions. Because of the low dosage, side effects with Aristogesic have been relatively infrequent and minor in nature. However, more serious side effects have traditionally been observed on all corticosteroid therapy. Patients on long-term Aristogesic therapy should, therefore, be observed carefully.

ogesic*

Steroid–Analgesic Compound LEDERLE

for relief of *chronic*—but *less severe* pain of rheumatic origin



Indications: Mild cases of rheumatoid arthritis, tenosynovitis, synovitis, bursitis, mild spondylitis, myositis, fibrositis, neuritis and certain muscular strains.

Dosage: Average initial dosage: 2 capsules 3 or 4 times daily. Maintenance dosage to be adjusted according to response.

Each Aristogesic Capsule contains:
ARISTOCORT® Triamcinolone . . . . . 0.5 mg.
Salicylamide . . . . . 325 mg.
Aluminum Hydroxide . . 75 mg.
Ascorbic Acid . . . . . 20 mg.

Supply: Bottles of 100

Collagen tissue (x250)

Lederle

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

now–
the unsurpassed advantages of Aristocort
in
topical form

Aristo

equivalent potency of hydrocortisone topically
with only one-tenth of the steroid required.
This means you can prescribe

unsurpassed
topical therapy...
for
more patients...
with
great security

Lederle LEDERLE LABORATORIES

For the great variety of inflammatory skin conditions seen daily in office and clinic

ARISTOCORT CREAM is highly effective on application of only very small quantities to affected areas. This new form of ARISTOCORT is more potent than conventional corticosteroids (studies show it to have 10 times the potency of hydrocortisone). Yet ARISTOCORT CREAM *does not cause sodium and water retention, rarely causes sensitization* or *irritation,* and is *cosmetically acceptable.*

cort® CREAM

Triamcinolone Acetonide 0.1% LEDERLE

PATIENTS PREFER ARISTOCORT CREAM

Blau and Kanof[1] found that of 21 patients with pruritic dermatoses treated with ARISTOCORT CREAM, 19 showed "good" to "marked" improvement. In paired comparison studies, 7 of 11 patients responded better to ARISTOCORT CREAM 0.1% than to hydrocortisone cream 1%, while 4 showed equal improvement with these two preparations. There was no primary irritation or allergic sensitization with ARISTOCORT CREAM.

Orentreich[2] made a double-blind study of 71 patients with a variety of dermatoses treated with ARISTOCORT CREAM 0.1% and 1% hydrocortisone acetate cream. Twenty-eight per cent of the patients preferred ARISTOCORT CREAM to the hydrocortisone cream, 68% found both creams equally effective, while only 4% preferred hydrocortisone.

Callaway[3], in a comparison study of 62 patients with various dermatoses treated with ARISTOCORT CREAM and hydrocortisone, concluded that ARISTOCORT CREAM 0.1% is as effective as 1% hydrocortisone in comparable conditions. "In no instance have we seen any evidence of sensitization develop and in no patient has there been any evidence of primary irritation." He describes ARISTOCORT CREAM as "a welcome addition to our dermatological armamentarium."

Robinson[4] also reported that 0.1% triamcinolone acetonide in a water-miscible base was at least as effective as 1% hydrocortisone in an identical base. He found it significant that of 40 patients in this comparison study, 12 preferred triamcinolone acetonide to hydrocortisone while only 3 preferred hydrocortisone.

Indications: atopic dermatitis, eczematous dermatitis, nummular eczema, contact dermatitis, pruritus vulvae and ani, generalized erythrodermia, external otitis, seborrheic dermatitis, eczematized psoriasis, neurodermatitis, eczematized mycotic dermatitis.

Dosage: ARISTOCORT CREAM should be applied in small quantities to the affected areas three or four times daily.

ARISTOCORT CREAM contains: Triamcinolone acetonide 0.1% as the active ingredient; 0.16% methylparaben and 0.04% propylparaben as preservatives; and, in a water base, glyceryl monostearate, squalene, polysorbate 80, spermaceti, stearyl alcohol and sorbitol.

Supply: 5 Gm. and 15 Gm. tubes.

References: 1. Blau, S., and Kanof, N. B.: Clinical Report, cited by permission. 2. Orentreich, N.: Clinical Report, cited by permission. 3. Callaway, J. L.: Clinical Report, cited by permission. 4. Robinson, R. C. V.: *Bull. School Med. Univ. Maryland,* 43:54, July, 1958.

A Division of AMERICAN CYANAMID COMPANY • Pearl River, New York

PLANTS ACROSS THE SEA

Many of our major American companies have found it to their advantage to establish manufacturing plants or retail outlets overseas. This places them in a good position to benefit from the accelerated growth in sales that should result from greater stability in foreign lands.

Harris, Upham & Co. has compiled a table of twenty that have large foreign interests. It observes that today there is an increasing tendency to regard these foreign interests as important assets, because economic growth is expected to continue at a faster pace abroad than in this country. There are a number of other positive factors that make overseas divisions attractive to United States corporations. Profit margins in many countries are often wider than they are in this country because of lower wage costs and reduced marketing expenses. Moreover, intensified foreign nationalism often results in preferential treatment being granted to U.S. companies with manufacturing plants abroad, as opposed to those that are merely exporters from this country.

There is a general trend toward a higher standard of living throughout the world which will create a greater demand for many products. Finally, the main objection of investors in the past is gradually being overcome as countries gain economic stability and reduce trade barriers. The European common market is a symptom of this world-wide progress.

COMPANIES WITH LARGE FOREIGN INTERESTS

	RECENT PRICE	INDIC. DIV.	YIELD	FOREIGN BUSINESS AS % OF TOTAL SALES	APROX. 1958-59 RANGE
AMERICAN CYANAMID	48	$1.60	3.3%	15%	56–39
AMERICAN RADIATOR & S.S.	16	0.60	3.7	25	18–11
BRISTOL-MYERS	71	2.15*	3.0	15	80–53
CATERPILLAR TRACTOR	88	2.40	2.7	42	93–55
CHESEBROUGH-POND'S	114	4.00*	3.5	51[b]	120–72
COCA-COLA CO.	121	5.00*	4.1	35	133–98
CORN PRODUCTS CO.	53	2.00	3.8	40	58–33
CROWN CORK & SEAL	33	—	—	30	34–12
EASTMAN KODAK	142	2.85*	2.0	26	154–97
FIRESTONE TIRE & RUBBER	133	2.60†	2.0	28[d]	139–83
GENERAL MOTORS	46	2.00	4.3	17	52–34
INTERNATIONAL BUSINESS MACHINES	506	2.60†	0.5	17	552–300
INTERNATIONAL TEL. & TEL.	29*[wi]	1.00	3.4	70	33–15*
MERCK & CO.	72	1.40	1.9	27	83–37
NATIONAL CASH REGISTER	73	1.20	1.6	38	86–50
PROCTER & GAMBLE	74	2.20	3.0	20	79–55
SCHERING CORP.	56	1.25*	2.2	19	62–33
SPERRY RAND	22	0.80	3.6	24[c]	25–17
WOOLWORTH (F. W.)	54	2.50	4.6	35[c]	59–36
WRIGLEY (WM.) JR.	90	4.50*	5.0	20[d]	91–78

a adjusted. b Net assets of foreign subsidiaries as % of total consol. net assets. c Foreign dividends as % of net income. d Foreign profits as % of net income. * Including extras. † Also stock dividend. wi When issued.

WHEN AMPHETAMINE IS NEEDED WHY PRESCRIBE SIDE EFFECTS?



Now a unique chemical structure gives you a disciplined amphetamine that raises the spirits without raising Cain. This new form—Tanphetamin—embodies the Durabond® Principle, which assures smooth, uniform, prolonged (all day) therapy from a single oral dose.[1-4]

Drug release is independent of intestinal motility, pH or any other physiological factors because no waxes, resins, enteric coatings or insoluble exchange agents of any kind are used.

No need to worry about the palpitation, jitters, euphoria and fast let-down associated with ordinary amphetamines.

References: 1. Garrett, T. A.: Clin. Med. 3:1185, 1956. 2. Cavallito, C. J., and Jewell, R.: J. Am. Pharm. A. (Scient. Ed.) 47:165, 1958. 3. Cavallito, C. J., and O'Dell, T. B.: J. Am. Pharm. A. 47:169, 1958. 4. Report on a New Repository Principle, Med. Sc. 3:376, 1958.

SECO-SYNATAN®

disciplines the control of both anxiety and depression

Each uncoated Durabond tabule contains
Tanphetamin 17.5 mg., secobarbital 35.0 mg.

SYNATAN® FORTE

puts decision in your patient's dieting

Each uncoated Durabond tabule contains
Tanphetamin 26.25 mg.

Dosage: 1 or 2 tabules at 10 a.m. for all-day control

Neisler

Irwin, Neisler & Co., Decatur, Illinois



NEW...prenatal supplements both especially for multiparas

Natalins® Comprehensive
Vitamins and minerals, Mead Johnson
tablets
12 significant vitamins and minerals

Natalins® Basic
Vitamins and minerals, Mead Johnson
tablets
4 basic vitamins and minerals

convenient one-a-day dosage

two formulations to meet individual needs of your patients

The need of the multipara for supplemental nutrition may be greater as successive pregnancies deplete her stores of nutrients. Anemia has been found to occur more frequently in multiparas than in primigravidas[1]—

Natalins Comprehensive and Basic meet this need generously—iron (40 mg. per tablet), ascorbic acid (100 mg. per tablet) and calcium (250 mg. per tablet).

1. Traylor, I. B., and Turpin, R. Am. J. Obst. & Gynec. 61: 71-74 (Jan.) 1951.

Mead Johnson
Symbol of service in medicine

MA-2598



Sobee® *formula was selected...*

Robert . . . *age 4 months*



Bobbie was a first child, and his mother didn't know what to do when he became a "crying baby," shortly after coming home from the hospital. He cried between feedings, and even *during* feedings. Then his doctor suggested a 2 day trial of Sobee . . . and the crying stopped! Now you've never seen such a bright, *cheerful* baby.



Willa . . . *age 5 months*

Like all allergic babies (like all *babies*), Willa needs love and lots of it. Willa gets love, in full measure, from her parents—while Sobee keeps her happily nourished.

Thomas . . . *age 7 months*



Tommy at 1 month was a colicky baby, irritable, usually crying—but physically normal except for an all-over rash. When Sobee replaced Tommy's milk formula, the crying stopped. His skin improved in a few days, and the rash was completely gone in a few more. Tommy liked Sobee, grew well on it. About a month ago Tommy was "weaned" back to milk, uneventfully.

SOBEE® HYPOALLERGENIC SOYA FORMULA, MEAD JOHNSON. 12000/1161-59

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Lactum *formula was selected...*



Mark . . . *age 3 days* Mark's urea clearance is low—but only normally so, for a newborn. Mark's renal functions will mature in a few days. Meanwhile the Dextri-Maltose® carbohydrate formula modifier in Mark's Lactum formula protects him against renal osmolar overload.



Robert . . . *age 6 months* Behold Bobby: right on or slightly above the "normal growth curve"—the very picture of balanced nutrition. Lactum has given him not too much, and not too little, of the nutrients Bobby needs, in a balanced formula.

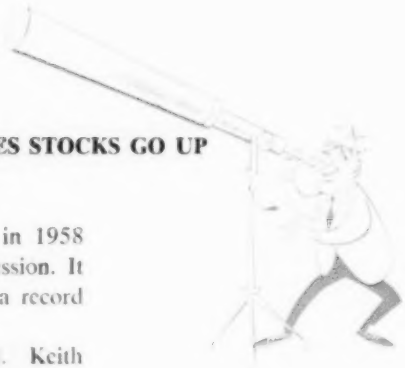


Pamela . . . *age 6 months* Pam's mother was worried when Pam's life was nothing but eat-and-sleep. Was Pam subnormal? Shouldn't she be more active? Dr. Graham reassured her: "She's just fine," he said, "just contented. Pam's *supposed* to act like that. I guess she likes her Lactum."

LACTUM® (MODIFIED MILK FORMULA, MEAD JOHNSON) LIQUID/"INSTANT" POWDER

Mead Johnson
Symbol of service in medicine

FP-27559



WHAT MAKES STOCKS GO UP

The stock market advanced, even in 1958 when business was undergoing a recession. It continued to go up in 1959, scoring a record high for all time.

Explanation are many and varied. Keith Funston, president of the New York Stock Exchange, supplied a few in the recent annual report of that institution. He pointed out that, as measured by the popular averages, the market advanced by about 38 percent in 1958.

The willingness of investors to pay increasingly higher prices, he said, reflected:

- "A general confidence in the future trend of earnings of American industry."
- "A very real fear of continued inflation on the part of many informed persons who are attempting, through the medium of common stocks, to keep up with living costs."
- "A current shortage in the available supply of many of the stocks most in demand by investors. Many owners of such shares are reluctant to sell because of the capital gains tax. And, many corporations, because of other tax considerations, are discouraged from financing their future growth via new stock issues."

Mr. Funston emphasized the threat of inflation which he called "particularly crucial to every American."

"While the fear of inflation," he stated, "may temporarily stimulate volume and prices on the stock market, it creates imbalances which over the long run are harmful. Sound management of our tremendous national debt, in and of itself, dictates the necessity of anti-inflationary steps to maintain confidence in the dollar at home and abroad. The public must insist that Congress balance the Federal budget.

"And, equally, in the private sectors of our economy we must urge that salary and wage increases be limited to those which do not, in themselves, raise unit production costs."



BRIGHTER FARM EQUIPMENT OUTLOOK

The biggest industry in the United States—farming—is going modern, says "The Value Line Investment Survey." Farm income is going down, but farmers are buying more equipment.

This demand for agricultural equipment is expected to remain on a steadily rising trend, the survey continues, for the following reasons:

- A relatively fixed amount of farm land must support an ever-increasing population. Therefore, the farmers must increase their capital investment in order to expand their output.
- The huge amount of farm machinery bought in the early post war years is rapidly reaching the age at which it must be retired or replaced. Meanwhile, more versatile farm machines are now under development which promise to make possible substantial further farm operating economies.

These underlying demand factors, it concludes, means increased sales and earnings for the farm equipment makers, this year and over the coming 3 to 5 years.



the **"Stylish Stout"**
who'd like a
"Junior Miss"
figure

To help her slim down to "bathing beauty" size—for her health's sake as well as for her social need—

SYNDROX®

methamphetamine hydrochloride

- controls the desire for constant nibbling—suppresses appetite
- takes the mind off food by encouraging activity and a brighter viewpoint
- Dose for appetite suppression: ½ to 1 tab. or tsp. before meals.

SYNDROX TABLETS (5 mg.)
ELIXIR (5 mg. per 5 cc.)

McNEIL McNEIL LABORATORIES, INC. PHILADELPHIA 32, PA.

SPEAKING OF FIGURES

Shipments of cigarettes in 1958 rose to another new record—436,300,000,000 against 409,400,000,000 the previous year. Production amounted to 470,000,000,000, up 32,000,000,000.

A total of 59,940,000 dozen pairs of nylons were sold in the United States last year, an increase of 1,310,000 dozen over 1957.

Cellophane sales last year increased 403,000,000 pounds, reflecting the generally healthy condition of the food business.

Wage boosts were won last year by 6,800,000 workers. The average increase was 12 cents an hour, the same as in 1957.

Every time we see the average of the stock market improve twenty cents, it means the total value of all stocks listed on the New York Stock Exchange is up a billion dollars. That is because there are five billion shares on the Big Board.

Federal expenditures for agriculture and agricultural resources were roughly $2,750,000,000 in 1950. In the current fiscal year expenditures for these purposes will rise to $6,750,000,000, by far the highest on record.

American families received an average $20,000,000 a day from their life insurance policies during 1958.

The nation's top 100 advertising agencies boosted their billings for advertising in 1958 to $3,600,000,000 from $3,300,000,000 the previous year.



From the first incision, the surgeon can be confident that his patient, when prepared with SULFASUXIDINE, has extensive protection against secondary infection, peritonitis, or abscesses from bowel pathogens.

Daily dosage: Adults—4½ to 6 tablets six times daily.

SULFASUXIDINE®

SUCCINYLSULFATHIAZOLE

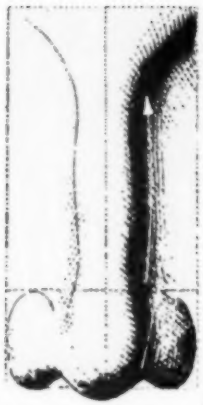
a "standard" in bowel surgery

MSD MERCK SHARP & DOHME

DIVISION OF MERCK & CO., Inc., PHILADELPHIA 1, PA.

penetrating

NOSE-OPENER BIOMYDRIN®





speeds medication to the site of irritation

penetrates, causing prompt dispersion of mucoid secretions. This deep infiltration allows all therapeutic agents to remain active for prolonged periods.

spreads almost instantly.

clears the air passages.

decongests without causing rebound congestion.

controls the allergic component.

combats infections.

safe—no pediatric dosage form is needed.

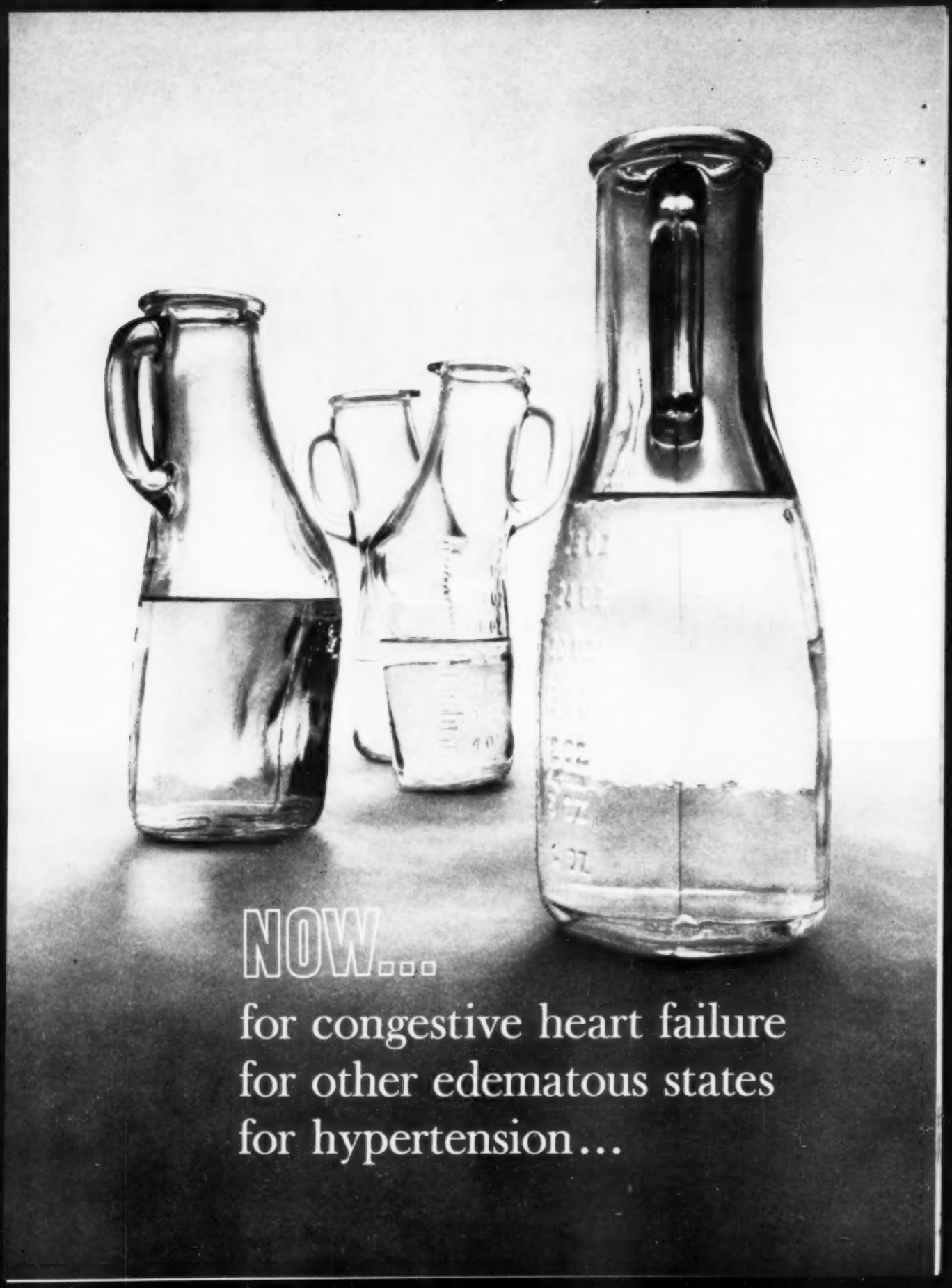
nasal spray
drops

WARNER
CHILCOTT

MORRIS PLAINS N. J.

Thonzonium bromide 0.05%
Neomycin sulfate 0.1%
Gramicidin 0.005%
Thonzylamine HCl 1.0%
Phenylephrine HCl 0.25%
15 ml. atomizer or dropper bottle.

Also, **Biomydrin® F nasal spray** with hydrocortisone alcohol 0.02%—useful in the most stubborn cases of edema and inflammation. 15 ml. atomizer.


NOW...
for congestive heart failure
for other edematous states
for hypertension...

highest fluid yields,
lowest blood pressure levels
yet achieved with oral
diuretic-antihypertensive
therapy...

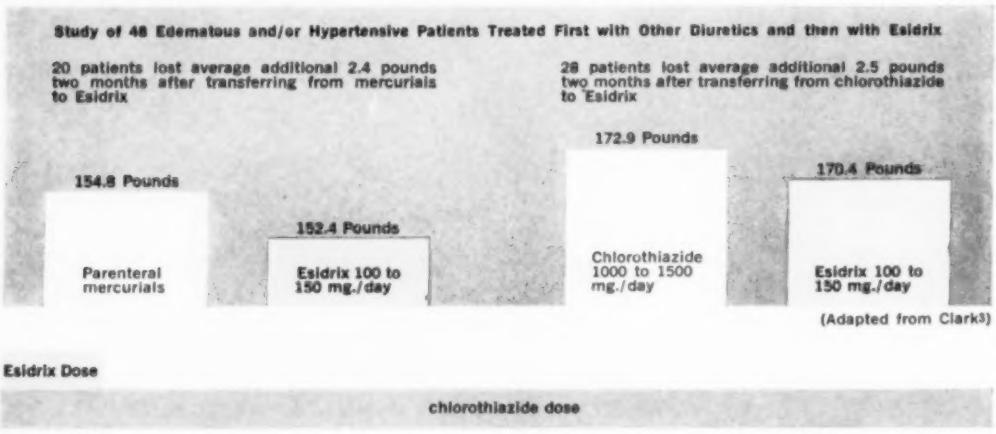
Esidrix T.M.

(hydrochlorothiazide CIBA)

Esidrix: 10 to 15 times more active than chlorothiazide in edema and hypertension

Esidrix relieves edema in many patients refractory to other diuretics: Studies reveal that certain patients unresponsive or refractory to mercurials and chlorothiazide respond readily to Esidrix. Brest and Likoff[1] observed that 9 of 12 patients with congestive heart failure – who failed to respond to other diuretics – were completely controlled with Esidrix. Esidrix appears to have clinical value even after the patient has developed partial tolerance to chlorothiazide, and may be found useful in cases of sensitivity to chlorothiazide.[2]

Therapy with Esidrix often results in more weight loss than with other diuretics: In a study[3] of 48 patients with edema and/or hypertension, who were treated originally with chlorothiazide or with mercurial diuretics, substitution of Esidrix at a dose of 100 to 150 mg./day resulted in additional average weight loss of 2.4 to 2.5 pounds.



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1. Brest, A. N., and Likoff, W.: Am. J. Cardiol. *3*:144 (Feb.) 1959. 2. Esch, A. F., Wilson, I. M., and Freis, E. D.: M. Ann. District of Columbia *28*:9 (Jan.) 1959. 3. Clark, G. M.: Clinical report to CIBA. 4. Dennis, E. W.: Clinical report to CIBA. 5. Hejtmancik, M. R., Herrmann, G. R., and Kroetz, F. W.: In press. [A preliminary report by these investigators has been published in Texas J. Med. *54*:854 (Dec.) 1958.]

A product of CIBA research

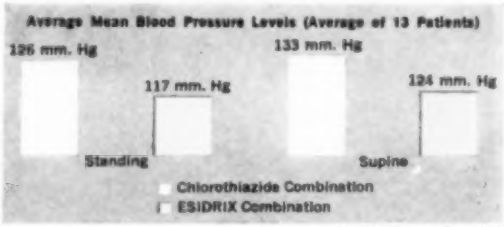
CIBA SUMMIT, N. J.

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Esidrix T.M.

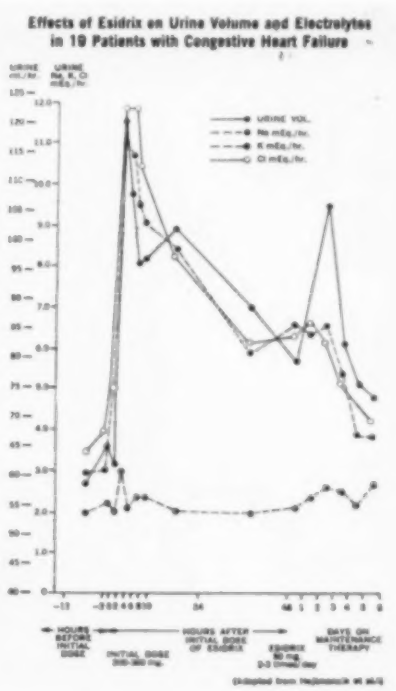
(hydrochlorothiazide CIBA)

Produces greater average reduction in blood pressure: Eleven of 13 hypertensive patients[4] were treated initially with a chlorothiazide-mecamylamine-reserpine combination (10 patients had 1000 mg. and 1 patient 500 mg. chlorothiazide daily); 1 patient had been treated with hydralazine and 1 had no previous medication. Nine were then transferred to an Esidrix-mecamylamine-reserpine combination and 4 to an Esidrix-reserpine combination for periods of 3 to 7 weeks (12 patients had 100 mg. and 1 patient 50 mg. Esidrix daily). Average mean blood pressure levels were recorded in the standing and supine positions. As shown in graph below, left, there was a further drop in blood pressure after patients were transferred to Esidrix.



(Adapted from Dennis[4])

Exceptional safety . . . reduced likelihood of electrolyte imbalance: While Esidrix markedly increases sodium and chloride excretion, it has far less effect on excretion of potassium (see chart at right) and bicarbonate. Hence, there is little likelihood of disturbing electrolyte balance when recommended procedures are followed.



DOSAGE: Esidrix is administered orally in an average dose of 75 to 100 mg. daily, with a range of 25 to 200 mg. A single dose may be given in the morning or tablets may be administered 2 or 3 times a day.

SUPPLIED: *Tablets*, 25 mg. (pink, scored); bottles of 100 and 1000. *Tablets*, 50 mg. (yellow, scored); bottles of 100 and 1000.

Q

A

Inquiries are received from a number of investors asking for information regarding specific securities. Answers are presented here on the basis of information received from recognized analysts and represent their considered opinion.

Textron, Inc. If you are a believer in the merits of diversification, you will believe in Textron. It has been most successful in following this course, thus changing its status from a company that had difficulty keeping its head above water a few years ago to one that is piling up steadily improved figures. From sales of $70,000,000 to $84,000,000 back in 1953 and 1954, it has since reported a total of $244,000,000 and is believed now to be running at a $300,000,000 rate. It had deficits in two former years but last year reported profit of $2.51 a share. It could conceivably earn $6 a share this year, and for a time its net will be free of income tax requirements, as earnings can be carried back against previous losses.

Diamond Gardner—About half of its sales now come from packaging materials and that is an expanding line. Its net suffered in last year's recession and in addition it faced heavy ex-

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Lederle

NOW...triple sulfa vaginal therapy

in convenient tablet form



NEW

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triple sulfa vaginal tablets

for simplified control of vaginal infections...

"The clinical response obtained with the new vaginal tablet [SULTRIN] is comparable to that obtained with the same three sulfonamides in cream form. The vaginal discharge was rapidly controlled and the vaginitis and cervical erosions were cured in a high percentage of patients."*

One tablet intravaginally twice daily for 10 days. Course of treatment may be repeated if necessary.

Box of 20 tablets with vaginal applicator.

also available: Triple Sulfa Cream.† Large tube with or without applicator.

*Taleghany, P., and Heltai, A.: Am. J. Obst. & Gynec., in press.

Ortho

†TRADEMARK

penses in connection with its diversification program and expansion. That condition appears to have changed and the outlook is for a long term improvement.

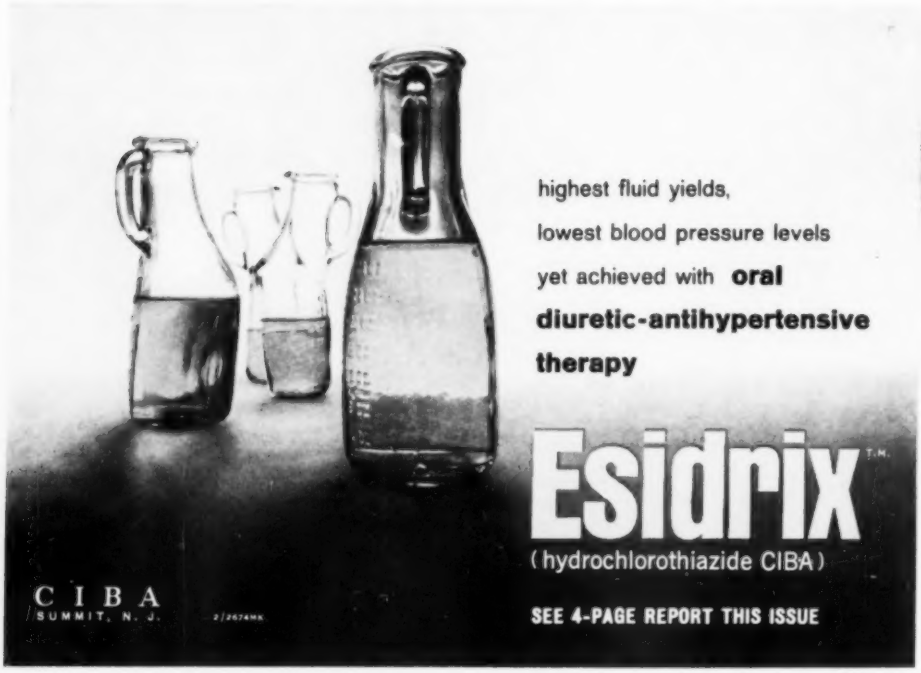
Beckman Instruments—It is an attractive speculation. There are many companies in the electronics business, the competition is great. But Beckman appears able to hold up its end. With its capitalization consisting of about 42 percent in long term debt and 58 percent in common stock and surplus, there is a leverage factor that could make the stock move rapidly. The company makes essential electronic components and equipment.

James Lees & Sons—The outlook in carpets and rugs is for higher prices. Also we are enjoying a higher level of housing starts. That is a combination that should help the entire industry. With reference to this company it should also benefit from a modernization and expansion plan it has carried out in its Southern mills.

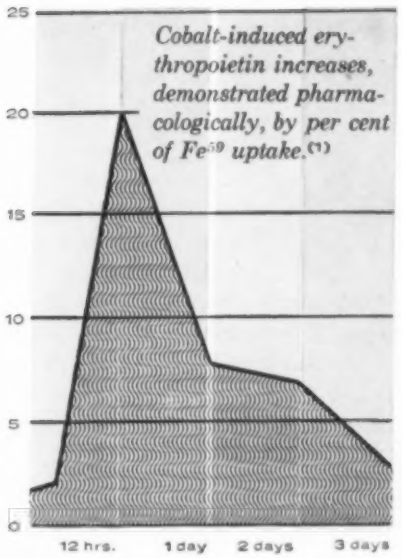
It is one of the country's three largest producers of woven wool carpets and rugs. There have been estimates its net this year may work out to $8 a share.

Harris-Intertype—Its financial condition is sound. Earnings for the fiscal year ended last June 30, were not too pleasing but currently they are doing better. At least they have been moving up modestly.

Anderson-Prichard Oil — It is a small integrated oil company that produces about 58 percent of its own crude oil requirements. The management has the reputation of being aggressive. The stock is a rea-



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Cobalt-induced erythropoietin increases, demonstrated pharmacologically, by per cent of Fe^{59} uptake.(1)

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Only cobalt among therapeutic agents enhances production of erythropoietin to promote red cell formation.[1,2,3]

With Roncovite-MF, increased erythropoietin production permits excellent hematopoietic response with sharply reduced iron dosage.

Cobalt-iron (Roncovite therapy) has been demonstrated as superior to iron alone in the common hypochromic anemias such as menstrual anemia, anemia of pregnancy, nutritional anemia of infancy and refractory anemias of chronic infection.[4,5,6,7,8]

(1) Goldwasser, E.: Jacobson, L. O.: Fried, W., and Pizak, L. F.: Blood 13:55 (Jan.) 1958. (2) Gurney, C. W.: Jacobson, L. O. and Goldwasser, E.: Ann. Int. Med. 49:363 (Aug.) 1958. (3) Korst, D. R.; Bishop, R. C. and Bethell, F. H.: J. Lab. & Clin. Med. 52:364 (Sept.) 1958. (4) Ausman, D. C.: Journal-Lancet 76:290 (Oct.) 1956. (5) Holly, R. G.: Obst. & Gynec. 9:299 (Mar.) 1957. (6) Holly, R. G.: Clin. Obst. & Gynec. 1:15 (Mar.) 1958. (7) Diamond, E. F.: Gonzales, F., and Pisani, A.: Illinois M. J. 113:154 (April) 1958. (8) Hill, J. M.: La Jous, J., and Sebastian, F. J.: Texas State J. Med. 51:686 (Oct.) 1955.

LLOYD BROTHERS, INC. • CINCINNATI 3, OHIO

sonable risk for a business man and should improve with the industry. Its gain in revenues over the last few years has been relatively better than most companies in its class.



Allis Chalmers — Given a continuation of the present upswing in the general economy and this company should do better. Its capital expenditures from 1951 through 1957 amounted to a resounding $110,000,000. It is in a position to benefit from this now. The company is a leading maker of farm equipment and is strong in the heavy electrical equipment and machinery fields.

Southern Railway—It is efficiently operated and did well even during the recession of 1958. Management has displayed an ability to carry a relatively large part of its gross down to net. Thus, while last year's carloadings were down 12 percent from the previous year's figure, gross revenues were off less than 4 percent and the road was able to carry 18.5 percent of the gross to its net operating income, before taxes. Earnings on the common this year are estimated at between $5.50 and $6.00.



Harshaw Chemical — Sales were lower in the December quarter as against the same period the previous year but this was largely due to abnormally high deliveries of nickel products in the former period after the government diversion of most of its nickel stockpile commitments to the free market. The outlook is for a moderate improvement in earnings this year. The company's financial position is sound, with a 3:1 ratio of current assets to current liabilities.



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FINANCIAL COLUMNIST, NEW YORK HERALD TRIBUNE

WITH THIS enlarged and up-to-the-minute treatment Norman Stabler continues to give the businessman and student the best written introduction to the meaning of the financial news. His chapters show how to interpret the daily reports of security and commodity markets, mutual funds, regulatory agencies such as the Federal Reserve System and the Securities and Exchange Commission, the put and call market, and business indexes. The book is illustrated with photographs and line cuts, and contains a full glossary of frequently used but often misunderstood business and financial terms. The previous edition sold 8000 copies. Price: $2.95

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- **a clear...colorless...quick-drying solution.**
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Pro-Blem contains 70% isopropyl alcohol—a potent cutaneous bactericidal agent, 0.3% hexachlorophene—an effective cutaneous bacteriostatic agent and 0.5% cetyl alcohol—to bind the hexachlorophene to the skin for prolonged bacteriostatic effect.

Pro-Blem should be applied 3 to 4 times daily, or at more frequent intervals, with a wad of cotton or directly by hand and massaged into affected areas and allowed to dry. Optimum results are obtained with continued use.

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Pro-Blem is also highly effective in the treatment of sycosis vulgaris and other infectious dermatitis of the face.

℞ Prescription For Travel

Because of liberal U. S. Customs regulations, the American tourist can come home loaded with duty-free foreign merchandise. The secret is in knowing your full rights. Here are some pointers which will help you.

Making the Most of Your CUSTOMS ALLOWANCE

The American shopper's greatest ally, when bargain-hunting overseas is, surprisingly enough, Uncle Sam. For thanks to the generous regulations of our Customs Service, returning travelers can bring with them a bonanza in purchases entirely duty free.

Relatively few U.S. travelers understand—or take full advantage of—all of the Customs regulations which can work in their favor, says the European Travel Commission. Here, then, are the principal rulings. You may find that they contain some pleasant surprises.

First of all, every U.S. resident who has been out of the country for at least 48 hours is entitled to bring back $200 worth of purchases duty free. Those who have been abroad twelve days or longer (and this includes practically all U.S. visitors to Europe) may return with $500 worth of merchandise duty free provided they have not claimed a similar $500 exemption within the past six months.

A lesser-known fact is that children (whether infants or teenagers) are entitled to the same exemptions as adults. Members of a family traveling together can therefore pool their individual exemptions to reduce or eliminate the duty on a costly purchase such as an automobile . . . or to increase the amount of perfume, tobacco or liquor they can bring in duty free.

Declare Wholesale Value

Another fact, not widely known, is that it is entirely proper to declare the *wholesale,* rather than the retail, value of items purchased abroad. By applying this knowledge, you can often stretch your customs allowance a full 20 percent or more. A word of warning, however. U.S. Customs officers can pinpoint the wholesale value of Italian jewelry or Swedish Orrefors crystal at fifty paces, and any intentional attempt at deception on the part of the returning traveler can lead to a stiff penalty. It is important to remember, too, that the U.S. Customs valuation of foreign purchases is always based

Overeating

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Successful

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Urticaria?

Dimetane works to relieve the symptoms in urticarial reactions, as it does in allergic rhinitis, atopic and contact dermatitis. The summary conclusion of extensive clinical studies to date: Dimetane provides unexcelled antihistaminic potency with minimal side effects—in the whole gamut of allergic disorders. For your patient with allergic symptoms prescribe Dimetane, available in the following forms: ORAL: Extentabs® (12 mg.), Tablets (4 mg.), Elixir (2 mg./5 cc.). PARENTERAL: Dimetane-Ten Injectable (10 mg./cc.) or Dimetane-100 Injectable (100 mg./cc.). A. H. Robins Co., Inc., Richmond 20, Virginia. Ethical Pharmaceuticals of Merit Since 1878.

Robins

Dimetane!

(PARABROMDYLAMINE MALEATE)®

on the official exchange rate, not the usually lower tourist rate.

The biggest boon of all, perhaps, is that all bonafide gifts costing less than $10 may be mailed home duty free and need not be listed on your declaration (i.e.: under your $200 or $500 exemption). Since most gifts fall into the "under $10 category," this ruling is a true life-saver. Not only does it stretch your Customs allowance but—by mailing gifts back to the States via International Parcel Post—you'll spare yourself the nuisance of touring Europe like a sightseeing Santa Claus, staggering under an ever-growing cluster of packages.

Most shops will handle the mailing for you at a small charge, reports the European Travel Commission. Important: Be sure that all parcel post packages are clearly marked "Gift Enclosed."

Still another way to lighten your load is to arrange to have major purchases (those worth over $10) shipped directly home to you after you return to the States. In order to be admitted duty free, however, all such items not accompanying you must be listed individually on your Customs declaration at the time you re-enter this country.

Restricted Items

While liberal quantities of most items may be brought into the United States under the standard exemptions, the U.S. Customs Service does

EUROPE'S NOVEL PHONE SERVICES

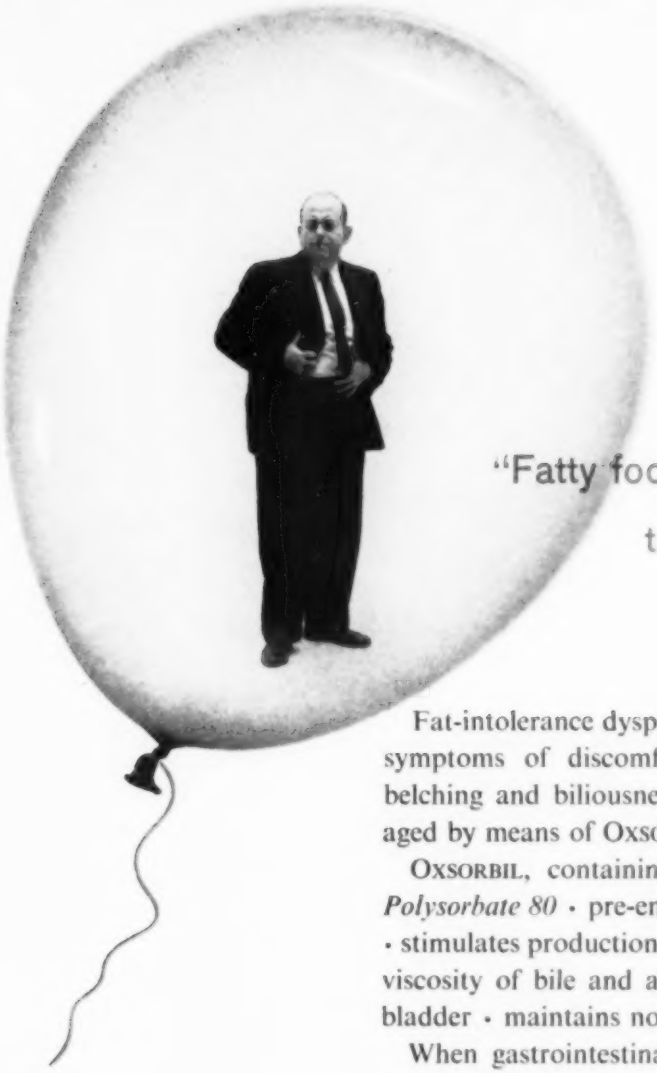
A list of special phone numbers can come in handy for tourists bound for Europe. Thanks to automatic dial telephone systems now in use in major cities across the Atlantic, all sorts of helpful services have become available to the tourist who knows the right numbers.

Wonder what's going on in London? Just dial ASK 9211 for a quick briefing on the day's highlights. Need the help of an English-speaking telephone operator in Paris? Dial 12 and she'll be on the wire in a jiffy. Paris also has an "all-purpose" number, S-V-P, that can be your telephonic shortcut to locating all sorts of services and products from baby sitters and dog walkers to antiques and automobiles.

One of the best numbers in Switzerland is 11. Number 11 can tell you who won yesterday's football game, when the next train leaves for Brussels or what's being offered at the local Opera House. It will also wake you up in the morning, take messages for you, switch your incoming calls to another number.

Vienna offers some of the most off-beat telephonic services. Number 1514 for example, will bring you a daily etiquette tip, while 1560 will provide a soothing bedtime story (in German, of course) to lull Junior to sleep. Other dial services, offered within the past year, have included such fare as sports results, ski reports, rock-and-roll recordings, and the beeping sounds of the latest earth satellite.

Holland, too, has its share of novel phone services. Perhaps the most helpful are the "Informaphones" installed at the Amsterdam VVV Tourist Office information booth opposite the Central Station. For ten Dutch cents (2.6 cents U.S.), special coin telephones dispense two minutes of freshly recorded "what-to-do" tips in a choice of four languages: English, French, German and Dutch. After the recording ends, a drawer under the telephone slides open, automatically dispensing folders, maps and other helpful tourist literature.



"Fatty foods always give me that bloated feeling, doctor."

Fat-intolerance dyspepsia, with its characteristic symptoms of discomforting fullness, flatulence, belching and biliousness, can be effectively managed by means of OXSORBIL.

OXSORBIL, containing the surface-active agent *Polysorbate 80* · pre-emulsifies fats in the stomach · stimulates production and flow of bile · decreases viscosity of bile and aids in flushing of the gallbladder · maintains normal peristaltic tone.

When gastrointestinal spasm and nervous tension complicate the management of the patient OXSORBIL-PB, containing phenobarbital and belladonna, is recommended.

Supplied: Bottles of 100 capsules.

Literature available upon request

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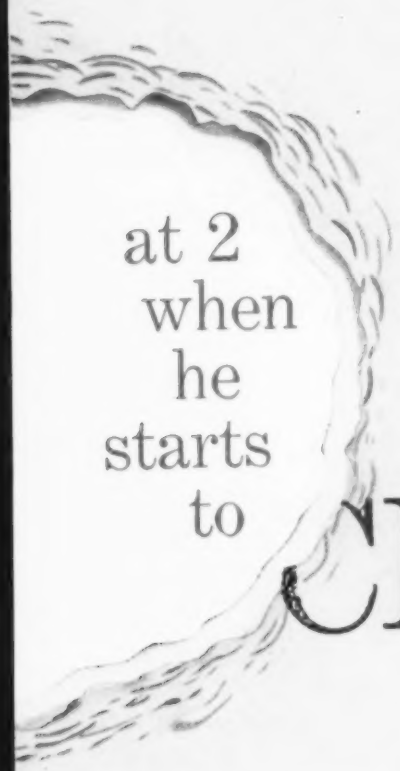
Choleretic—FAT EMULSIFIER—Cholagogue

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The OXSORBIL formula plus phenobarbital and belladonna

For the management of fat-intolerance dyspepsia



at 2
when
he
starts
to
CHEW..... break

Rejection of forced feedings, including vitamin drops and liquids, begins at an early age as an expression of independence ("I don't wanna").

Vitamins that you prescribe may be rejected by as much as 52% of the 2-9 year olds, according to recent studies. And this can be the age when vitamin supplementation is most desirable.

DELECTAVITES make available a new solid dosage form that can be chewed beginning at age two. Now you can go directly from drops to DELECTAVITES. Be certain of continuous and uninterrupted vitamin supplementation after infancy with DELECTAVITES. There's nothing easier to give—children *ask* for them.

the rejection barrier with

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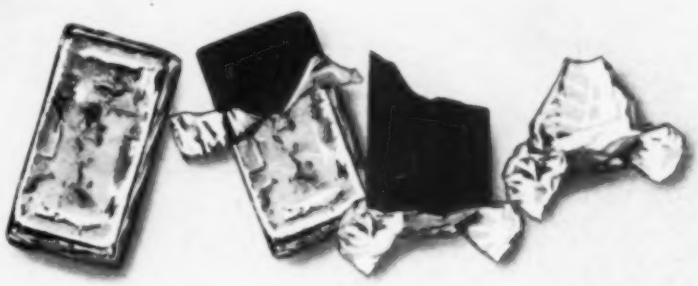
(chocolate-like vitamin-mineral nuggets)

Each nugget contains:

Vitamin A	5,000 Units*
Vitamin D	1,000 Units*
Vitamin C	75 mg.
Vitamin E	2 Units†
Vitamin B-1	2.5 mg.
Vitamin B-2	2.5 mg.
Vitamin B-6	1 mg.
Vitamin B-12 Activity	3 mcg.
Panthenol	5 mg.
Nicotinamide	20 mg.
Folic Acid	0.1 mg.
Biotin	30 mcg.
Rutin	12 mg.
Calcium Carbonate	125 mg.
Boron	0.1 mg.
Cobalt	0.1 mg.
Fluorine	0.1 mg.
Iodine	0.2 mg.
Magnesium	3.0 mg.
Manganese	1.0 mg.
Molybdenum	1.0 mg.
Potassium	2.5 mg.

*U.S.P. units †Int. units

Dose: Only one chocolate Delectavites nugget each day. Box of 30 (one month's supply), and 90 (three months' supply).



White WHITE LABORATORIES, INC., KENILWORTH, N. J.

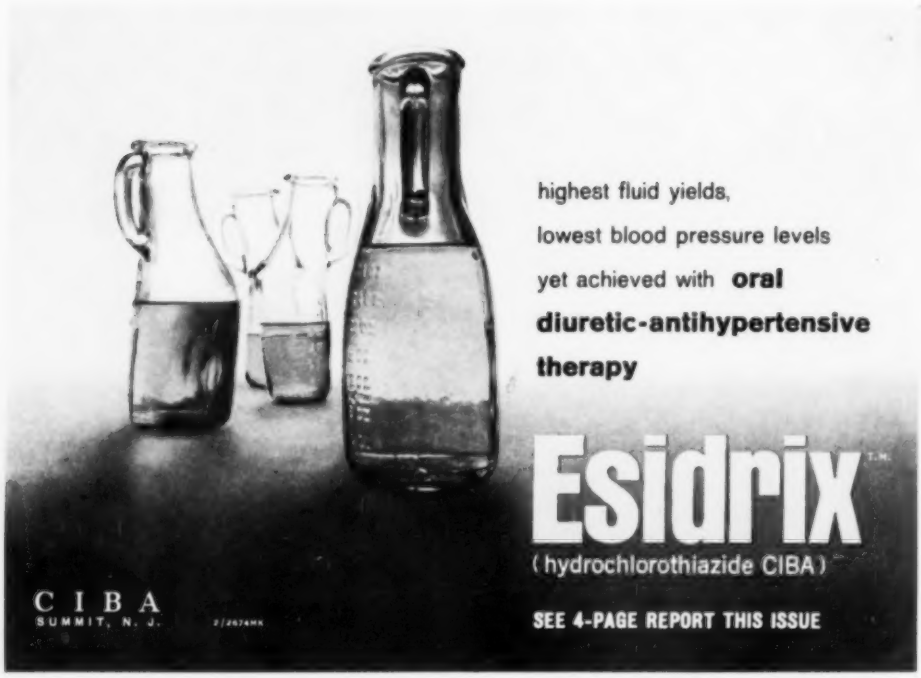
impose limits on certain items such as alcoholic beverages (one gallon per person), some tobacco products (no more than 100 cigars), and perfume (generally speaking, only one bottle of each well-known brand). However, Government regulations covering the import of perfumes and certain "registered trade mark items" such as flat silver and cameras are rather complex. To be on the safe side, check with your local Customs office on these before heading overseas.

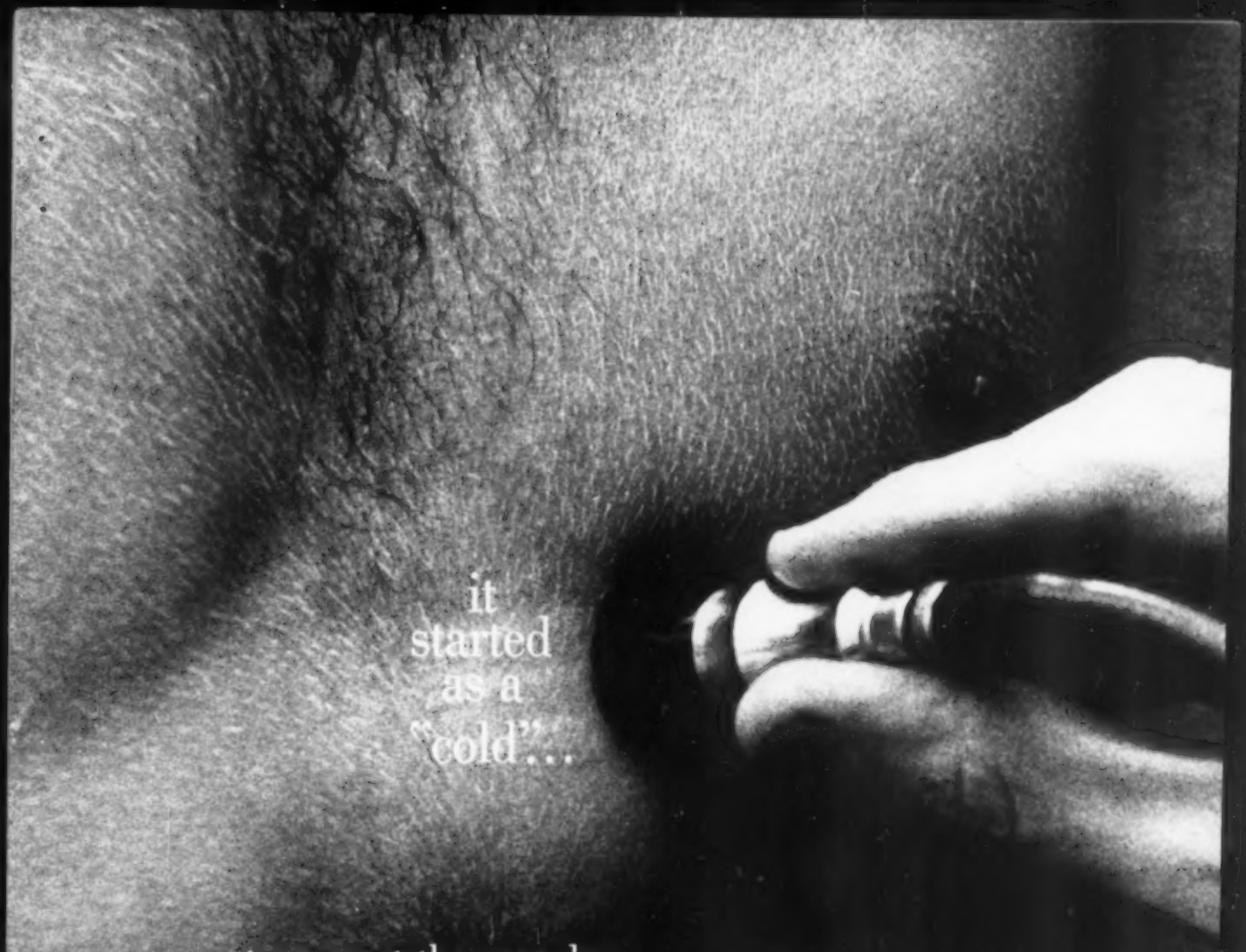
Interestingly enough, there is no limit to the quantity of foreign cigarettes you may bring back into the country. There is no restriction, either, on the number of antiques (items made before 1830) which may be brought in duty free. This includes furniture, hardware, brass, bronze, marble, terracotta, porcelain, chinaware and, indeed, any object considered to have artistic value. Original paintings of any date may also be brought in duty free. The exception is rugs and carpets made after 1700.

Aiding the Customs Officer

To make things easy for yourself—and for the Customs officer who will inspect your baggage when you return—be sure to do the following things:

- Keep a running record of all purchases made abroad, with prices paid.
- Save all sales receipts for quick reference, should the inspector ask to see them.
- Try to assemble all purchases in one section of your luggage to expedite inspection on arrival in the U.S.
- If you plan to take a costly foreign-make camera, binoculars or typewriter with you, be sure to "check it out" with a Customs officer at the steamship pier or airport *before* leaving. He'll give you a receipt indicating that the article was registered prior to leaving the United States and is therefore not dutiable when you return.





to prevent the sequelae
of u.r.i. ... and relieve the
symptom complex

ACHROCIDIN®

Tetracycline-Antihistamine-Analgesic Compound Lederle

Pneumonitis, otitis, tonsillitis, adenitis, sinusitis or bronchitis develops as a serious bacterial complication in about one in eight cases of acute upper respiratory infection.[1] To protect and relieve the "cold" patient... ACHROCIDIN.

Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline (125 mg.); phenacetin (120 mg.); caffeine (30 mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP (lemon-lime flavored), caffeine-free.

1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

Looking at Dublin

For most American visitors, Dublin is the focal point of interest in Ireland. Presented here is a warm-hearted description of the city by a well-known essayist and humorist.

JOHN D. SHERIDAN

A city is like a good painting in this—that if you want to see it properly you must begin by standing well back from it. You can, of course, 'do' a city dutifully (and often pleasurably) with the help of a guide or a guide-book, but this is the mole's way: you move through long avenues of stone, and your horizon is the nearest wall; you gather memories, but the composite picture escapes you. (I think of New York as a place of hurrying crowds and canyon streets, with coloured taxis cruising like schools of tropical fish, but the picture that remains in my mind is that of the fairy-tale skyline that I saw on a five-cent ferry trip to Staten Island).

And one of the delights of Dublin is that you can see it—literally—at a glance, that with a little briefing you can look down at the whole spatter and spread of it. The close-ups can come later, for Dublin is rich in show places and can beguile you for a day or a fortnight, but you must get your perspective right first and not miss the wood for the trees.

Go first to the top of Howth Hill, about nine miles from the city centre, and see how Dublin curves along the shore of its lovely bay, with the hills for backdrop. Opposite you will see the nutcracker harbour of Dun Laoghaire (a town in its own right, but virtually part of Dublin), and a little to the left the pared cone of the Sugarloaf (was ever a mountain luckier in its name?), the sweep of Killiney Bay, and then, dim in the distance, the ghost of Wicklow Head.

Howth will suffice, but unless time presses you should look at Dublin too from the mountains that lie south of the city and bear the same name. The buses take you only to the foothills, and there is no funicular (we are so fond of our mountains that we keep them as secret as a conspiracy), but a taxi, or a friend's car—and friends are not hard to come by in Dublin—will bring you quickly to the topmost ridge, and from there you can look down on the spacious tumble of a city that has filled the gap between the sea and the hills, and see the smoke from the new suburbs stretching out into the central plain that runs right across the country to the stony fields of Galway.

Once you come down from the heights, the rest is up to yourself. You can see the Book of Kells in Trinity College Library, or drink a free tankard of heady black stout in the famous Guinness brewery. At least you have started well, and got your bearings. To leave Dublin without looking down on her from the heights is as foolish as going to San Sebastian and ignoring Monte Igueldo.

It is easy to find one's way about Dublin, for it has a centre and pivot—a monument that stands out as conspicuously as a flagpole in the middle of a golf green or an egg-cup in an old-fashioned apple tart. English Nelson is still on top of his Pillar, though Trafalgar is no part of our history. From time to time there is talk of taking him down, but we have got used to Horatio, and he has been so long with us that he has lost all political significance and might well be Hannibal or Haroun al Raschid.

If you walk south from Nelson on his Pillar, towards the Liffey and the hills, you can look seawards from O'Connell Bridge and see the dome of the Custom House that was designed by Gandon and completed towards the end of

Reprinted from Ireland of the Welcomes through the courtesy of the Irish Tourist Office.



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The acutely excited patient can be quickly calmed when SPARINE is on hand in the physician's bag. In both medical and mental emergencies, SPARINE quiets hyperactivity, encourages cooperation, and simplifies difficult management.

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ACCUMULATING EVIDENCE shows safety

CLINICAL STUDY OF CADMIUM SULFIDE SHAMPOO

Canad. M. A. J. *79*:917 (Dec. 1) 1958

"In treatment of seborrhoea of the scalp with cadmium sulfide 1% (Capsebon), a good result was obtained in 71% of the 127 cases, a fair result . . . in 15%, and no result in 14%. The preparation is an excellent shampoo. Its use does not bring about 'rebound' oiliness. No toxic side effects were seen."

J. H. HARVEY, M.D., and L. P. EREAUX, M.D.

PRELIMINARY AND SHORT REPORT

CADMIUM SULFIDE SHAMPOO IN SEBORRHEA CAPITIS

J. Invest. Dermat. *29*:159 (Sept.) 1957

"Of eighty-four patients treated for seborrheic problems in the scalp with . . . cadmium sulfide shampoo . . . seventy-nine [94%] obtained good to excellent results."

W. L. KIRBY, M.D.

New Beneficial Agents in the Treatment of Acne Vulgaris and Seborrheic Dermatitis

Postgrad. Med. *24*:439 (Oct.) 1958

" . . . this preparation does appear to be one of the better antiseborrheic agents. The effectiveness and cosmetic acceptability of this preparation would appear to warrant its further use."

D. G. STOUGH, M.D.; ROBERT LEWIS, M.D.; B. L. FARMER, M.D.; L. S. OSMENT, M.D., and R. O. NOOJIN, M.D.

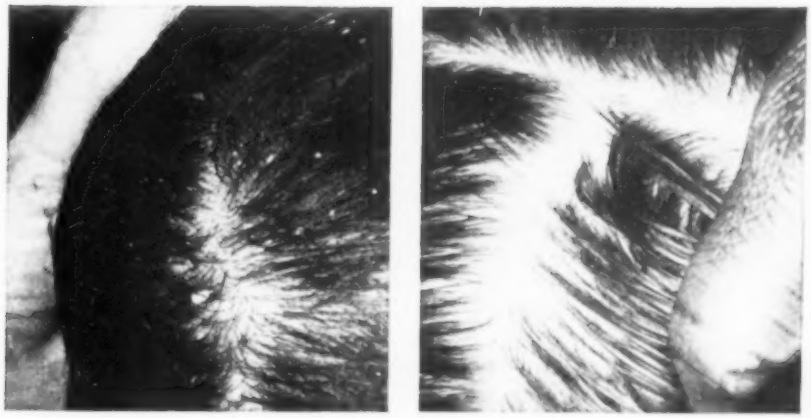
Cadmium Shampoo Treatment Of Seborrheic Dermatitis

Texas J. Med. *53*:640 (Aug.) 1957

" . . . an extremely useful agent in control of chronic or recurrent seborrhea of the scalp . . . an important contribution . . . "

J. FRED MULLINS, M.D., and JAMES R. BARNETT, M.D.

and effectiveness of this therapeutic shampoo



BEFORE AFTER

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Capsebon is easy to apply—easy as an ordinary shampoo, and just as quick.

Available in 4-oz. bottle, on prescription only.

Additional references available from Professional Service Department on request.

Capsebon™

1% cadmium sulfide suspension

PITMAN-MOORE COMPANY
DIVISION OF ALLIED LABORATORIES, INC.
INDIANAPOLIS 6, INDIANA

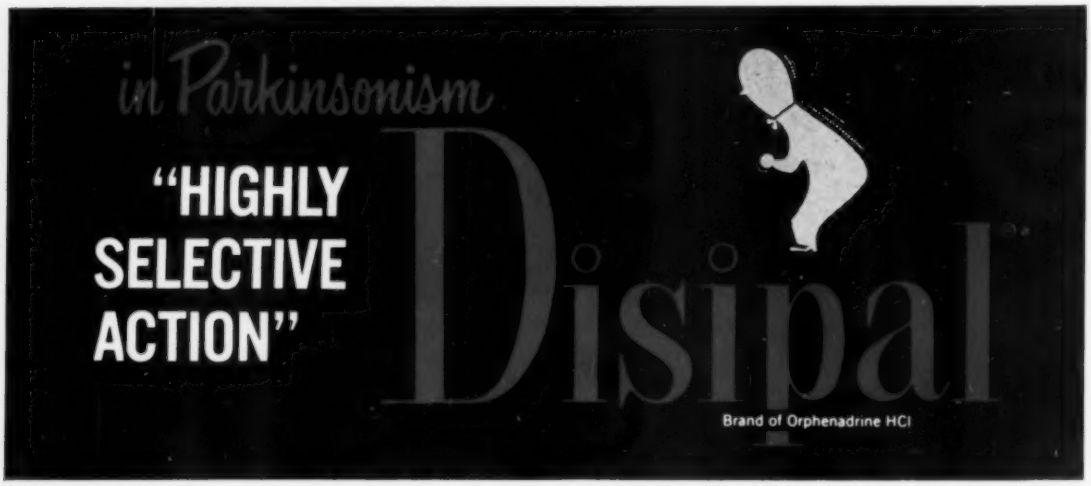
the eighteenth century. Going straight across the bridge you soon come to College Green, where the traffic snarls between the windowless Bank of Ireland and many-windowed Trinity College, and by-passes the little segment of greensward on which Goldsmith and Burke still stand. (Goldsmith was not a great success at the university, but Trinity is glad to claim him now, and the beloved vagabond who talked like poor Poll, flanks the greatest orator of his time).

And if the Pillar is the centre of Dublin, College Green is surely its heart. About here the tumult of our history has swelled and ebbed for centuries.

If you turn right at College Green, and walk up Dame Street, you will pass Dublin Castle (and you might easily pass it without seeing it), where many an Irish head decorated a spike in the old days. And a little further on are our two ancient cathedrals: Christchurch, where Strongbow the Norman is buried, and St. Patrick's, where Swift and Stella are together again.

But you can walk straight on through narrow, fashionable Grafton Street, and fare almost as well, for Dublin has a surfeit of fine buildings. Turning left when you reach St. Stephen's Green, and left again shortly after you leave it, you enter Merrion Square, with its characteristic Georgian houses, in one of which W. B. Yeats lived for a time: and then a great spatter of buildings, some facing the Square and some with their backs to it—Dail Eireann, Government Buildings, the National Library, the National Museum, and the National Gallery.

I may even have left out a few, but I am tired of litanies, and I don't recommend this rapid swallowing of buildings — it tends to bring on indigestion. (On a 'rubberneck' tour of Washington once, I remember, our courier was disgusted when he missed me during our visit to that mammoth museum, the Smithsonian Institution, and found me sitting on the steps outside, eating ice cream in the sun. I may not have looked too dignified, but I was happy—happier far than those who were pacing round interminable glass cases labelled 'Dress Through the Ages').



"...effective as a euphoriant...and as an energizing agent against weakness, fatigue, adynamia and akinesia... potent action against sialorrhea, diaphoresis, oculogyria, and blepharospasm...also lessens rigidity and tremor... minimal side reactions ... safe ... even in cases complicated by glaucoma."

Doshay, L. J., and Constable, K.: J.A.M.A. *163*:1352 (Apr. 13) 1957.

*Trademark of Brocades-Stheeman & Pharmacia. U.S. Patent No. 2567351. Other patents pending.

Riker

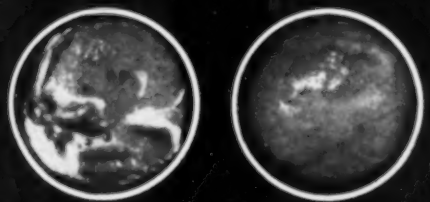
Northridge, California

explodes trichomonads

VAGISEC®

LIQUID AND JELLY

93.1% "cure" rate using strictest criterion— negative cultures for 3 consecutive months



before VAGISEC — 30 days' "cure"

Repeated negative cultures, following treatment with VAGISEC liquid and jelly, confirmed "cures" in 93.1% of trichomoniasis patients (54 of 58) treated by Giorlando and Brandt.[1] These patients were followed up, using cultures, for a minimum of three months, many for as long as eight months. *All* remained negative. Using the same strict criterion of negative cultures, Weiner achieved comparable success[2]—46 of 51 patients freed of trichomonads.

VAGISEC therapy is consistently characterized by immediate relief of painful symptoms – few recurrences.

To help rule out conjugal re-infection—Husbands willingly cooperate as a part of the wife's treatment when RAMSES,® the pure gum rubber prophylactics with "built-in" sensitivity, are suggested for use routinely.

Active ingredients in VAGISEC liquid: Polyoxyethylene nonyl phenol, Sodium ethylene diamine tetra-acetate, Sodium dioctyl sulfosuccinate. In addition, VAGISEC jelly contains Alcohol 5% by weight.

1. Giorlando, S. W., and Brandt, M. L.: Am. J. Obst. & Gynec. 76:666 (Sept.) 1958. 2. Weiner, H. H.: Clin. Med. 5:25 (Jan.) 1958.

VAGISEC and RAMSES are registered trade-marks of Julius Schmid, Inc.

JULIUS SCHMID, INC.
423 West 55th Street, New York 19, N. Y.

So come back with me now to the Pillar, down Henry Street, and into Moore Street—that crowded, smelly, exhilarating, and altogether lovable street where fruit, flowers, vegetables, long long red candles, and mechanical toys are sold in the open. You won't find it mentioned in the guide books, but it is noisy, human, and refreshingly vulgar, and after the turrets and the tombs it will warm the cockles of your heart.

I would like you also to see the Phoenix Park, which is only a short bus run from the Pillar. There are bigger parks than this, but I know of no other park of its size that is so near the heart of a city. The Phoenix has a green acre for every yard in a mile, two hundred acres of playing fields, a Zoo, a polo ground, herds of deer, the police headquarters, the official residence of the President of the Republic, the Apostolic Nunciature, and the American Embassy—with a dog pond and a racecourse (just outside the boundary wall, admittedly, but don't let us quarrel over a couple of perches) thrown in for good measure.

But the picture of Dublin that I would like you to carry away with you (to give body and substance to the longdistance views from the hills) is a close-up of O'Connell Street on the day of a big hurling or Gaelic football match at Croke Park—on one of those tumultuous Sundays when inter-county rivalries blaze high and half Ireland comes to town.

And these big-boned countrymen who have been up since the crack of dawn are not overawed by the city. Nor are they strangers there; for Cousin Mick is in the police, Andy is in the Department of Agriculture, and there is always a cup of good tea to be got in Uncle Pat's out at Donnybrook. And here we have the secret of Dublin—which is that it is not cut off from the rest of the country but a living, breathing part of it. It is Kerry and Monaghan, Mayo and Donegal, and nine out of every ten Dubliners are permanent immigrants who are only a generation or so away from the title-deeds of a farm.

You will like Dublin. It is a warm-hearted place, a friendly place, where people still have time to talk and listen, and where no one need be a stranger for long.



they deserve

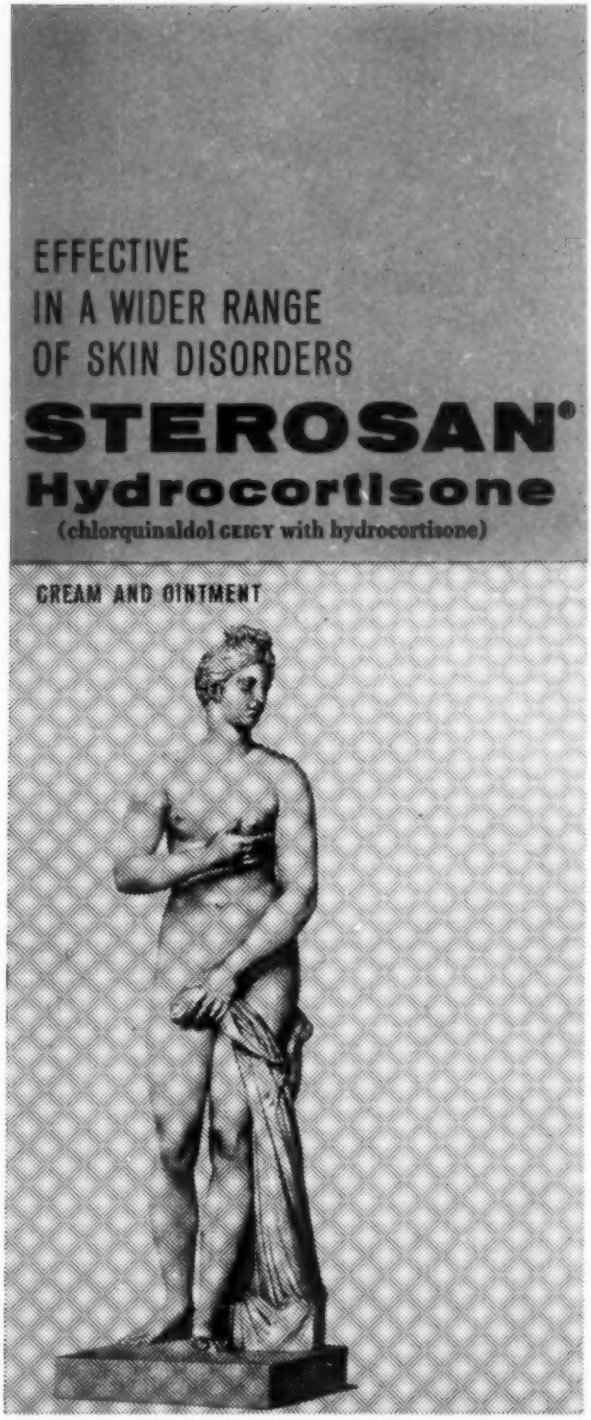
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CAPSULES—14 VITAMINS—11 MINERALS

LEDERLE LABORATORIES, a Division of
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The highly effective antibacterial, antifungal STEROSAN combined with anti-inflammatory, antipruritic hydrocortisone provides rapid healing in a *wider* range of infective and allergic skin disorders. STEROSAN-Hydrocortisone is superior to either drug used alone and is effective where many antibiotic-hydrocortisone preparations fail.[1] Virtually non-irritating and non-sensitizing, STEROSAN-Hydrocortisone has the added advantage of being odorless, non-greasy, nonstaining, and scarcely perceptible on the skin.

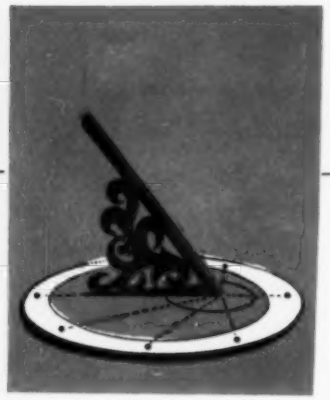
1. Pace, B. F.: M. Rec. & Ann. *51*:370, 1957.

STEROSAN®—Hydrocortisone (3% chlorquinaldol GEIGY with 1% hydrocortisone) Cream and Ointment. Tubes of 5 Gm. and 20 Gm. Prescription only.

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Calendar of Meetings

A listing of important medical conferences

MAY

Dusseldorf, Germany. Conference on International Union for Health Education of the Public, May 2-9. *Contact:* Secretary-General, 92 rue St. Denis, Paris 1, France.

Atlantic City, N. J. Association of American Physicians, May 5-6. *Contact:* Dr. Paul B. Beeson, Yale University School of Medicine, New Haven 11, Conn.

Atlantic City, N. J. American Society for Clinical Investigation, May 3-4. *Contact:* Dr. S. J. Farber, 550 1st Ave., New York 16, N. Y.

JUNE

Atlantic City, N. J. American Medical Association Annual Meeting, June 8-12. *Contact:* Dr. F. J. L. Blasingame, 535 North Dearborn St., Chicago 10, Ill.

Amsterdam, Netherlands. International Fertility Association, June 7-13. *Contact:* Dr. B. S. ten Berge, Women's Hospital, Groningen, Netherlands.

JULY

Denver, Colo. Rocky Mountain Cancer Conference, July 22-23. *Contact:* Dr. N. Paul Isbell, 835 Republic Bldg., Denver 2.

Montreal, Quebec. International Congress of Pediatrics, July 19-25. *Contact:* Dr. R. L. Denton, 2300 Tupper St., Montreal 25, Quebec.

Copenhagen, Denmark. International Psychoanalytical Association, July 26-30. *Contact:* Miss Pearl King, 37 Albion St., London, W. 2, England.

Portland, Maine. International Medical Conference on Mental Retardation, July 27-31. *Contact:* Dr. Ella Langer, State House, Augusta, Me.

Munich, Germany. International Congress of Radiology, July 23-30. *Contact:* Prof. Hans V. Braunbehrens, Forsthausstrasse 76, Frankfurt am Main, Germany.

AUGUST

Barcelona, Spain. World Federation for Mental Health, Aug. 30-Sept. 5. *Contact:* Miss Esther M. Thornton, 19 Manchester St., London, W. 1, England.

Madrid & Barcelona, Spain. International Congress for the History of Science, Aug. 30-Sept. 6. *Contact:* Prof. J. Vernet, Universidad de Barcelona, Barcelona, Spain.

SEPTEMBER

Istanbul, Turkey. European Congress on Rheumatism, Sept. 18-21. *Contact:* Prof. Hami Kocas, Medical School, Ankara, Turkey.

Paris, France. World Congress for Physical Therapy, Sept. 6-12. *Contact:* Miss M. J. Neilson, Tavistock House, Tavistock Square, London, W. C. 1, England.

Montreal, Canada. World Medical Association, Sept. 7-12, *Contact:* Dr. Louis H. Bauer, 10 Columbus Circle, New York 19, N. Y.

Proven

in over three years of clinical use
in over 600 clinical studies

Specific

FOR RELIEF OF ANXIETY
AND MUSCLE TENSION

Selective

Does not interfere with autonomic function
Does not impair mental efficiency,
motor control, or normal behavior
Has not produced hypotension,
agranulocytosis or jaundice

MEPROBAMATE (WALLACE)

Miltown®

Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets.

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THE HEART DISEASE PATIENT NEEDS RELIEF FROM EMOTIONAL STRESS



ANXIETY INTENSIFIES the physical disorder in heart disease. "The prognosis depends largely on the ability of the physician to control the anxiety factor, as well as the somatic disease."

(Friedlander, H. S.: The role of ataraxics in cardiology. Am. J. Cardiol. 1:395, March 1958.)

TRANQUILIZATION WITH MILTOWN enhances recovery from acute cardiac episodes and makes patients more amenable to necessary limitations of activities.

(Waldman, S. and Pelner, L.: Management of anxiety associated with heart disease. Am. Pract. & Digest Treat. 8:1075, July 1957.)

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Available in 400 mg. scored and 200 mg. sugar-coated tablets. Also available as MEPROSPAN® (200 mg. meprobamate *continuous release* capsules). In combination with a nitrate, for angina pectoris: MILTRATE® (Miltown 200 mg. + PETN 10 mg.).

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WALLACE LABORATORIES, *New Brunswick, N. J.*

Orinase* in the management of diabetes:

analysis of long-term experience in 9,168 patients

ORINASE CASE STUDY

PATIENT'S HISTORY

DEGREE OF CONTROL OF DIABETES

EXCELLENT | GOOD | FAIR | POOR

RESPONSE TO ORINASE ALONE: EXCELLENT | GOOD | FAIR | PRIMARY FAILURE | SECONDARY FAILURE

*PRIMARY FAILURE: FAILURE TO EXHIBIT ADEQUATE DIABETIC CONTROL ON TRIAL OF "ORINASE" WITHIN FIRST 10 DAYS OF THERAPY.

**SECONDARY FAILURE: RELAPSE ON "ORINASE" THERAPY, SOMETIME AFTER AN EXTENDED PERIOD OF SUCCESSFUL TREATMENT.

IF SECONDARY FAILURE OCCURRED INDICATE PREVIOUS RESPONSE TO ORINASE: EXCELLENT | GOOD | FAIR | POOR

INDICATE KNOWN FACTORS RESPONSIBLE FOR SECONDARY FAILURE

RESPONSE TO ORINASE - INSULIN COMBINATION THERAPY: UNCHANGED | IMPROVED | REMARKS:

WAS OTHER PATHOLOGY PRESENT, EITHER RELATED OR UNRELATED TO DIABETES? YES | NO | IF YES PLEASE SPECIFY

(IMPORTANT SEE REVERSE SIDE)

*TRADEMARK REG. U. S. PAT. OFF. — TOLBUTAMIDE, UPJOHN

A little over a year ago, a new epoch began in the treatment of diabetes: Orinase became available for general clinical practice. Today, more than 400,000 diabetics are enjoying the advantages of oral management.

the mass analysis of 9,168 patients

What has experience taught us? In this comprehensive report you will find the results of a detailed analysis of 9,168 patients observed on Orinase therapy by 420 cooperating physicians and clinics for periods ranging up to more than twenty-eight months. Coded IBM cards were employed for mass analysis, and in addition each case report was reviewed for observations and laboratory data which could not be readily submitted to an IBM coding procedure.



the results

The evidence is impressive. In brief, these are the highlights of the mass study: While patients who developed diabetes at the age of 40 or later are the most likely candidates for Orinase therapy, diabetics with a 20 to 40 age-of-onset also deserve a careful trial with the drug. A favorable response to Orinase, moreover, can be anticipated in certain patients who chronologically might be classed as juvenile or growth-onset diabetics, but whose disease behaves like the stable, maturity-onset form.

It is well established that "Orinase-responsive" diabetics show more stable blood sugar levels and less glycosuria on Orinase than on insulin. It is also noteworthy that you can expect excellent or good control of diabetes with Orinase in many patients who show only a fair or poor response to insulin. Of great significance, too, is the fact that four times as many diabetic patients respond favorably to Orinase as do to dietary control alone.

The remarkable safety of Orinase was confirmed by this study of thousands of patients. In only 1.5% of cases did side effects require cessation of therapy, and in no case were serious toxic reactions observed.

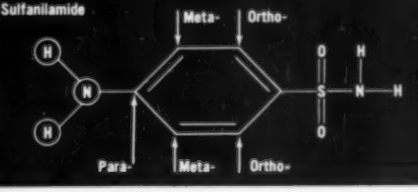
the answers to many questions

On the following pages are presented the most pertinent findings of this study. These should serve as a useful guide in the use of Orinase in your own practice.

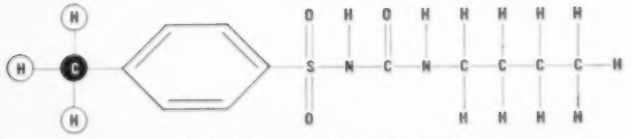
COPYRIGHT 1958, THE UPJOHN COMPANY

Front and back cover: the Orinase Case Study form used in the mass analysis of 9,168 diabetic patients.

Sulfanilamide



Orinase (tolbutamide)



Orinase is not a sulfanilamide derivative or "sulfa" drug. The substitution of a methyl group for an amino group in the para position of the benzene ring of Orinase renders the compound bacteriostatically inert and devoid of goitrogenic effect. Orinase is free of the potentially serious toxic properties of sulfanilamide derivatives.

In which age groups has Orinase therapy proved successful?

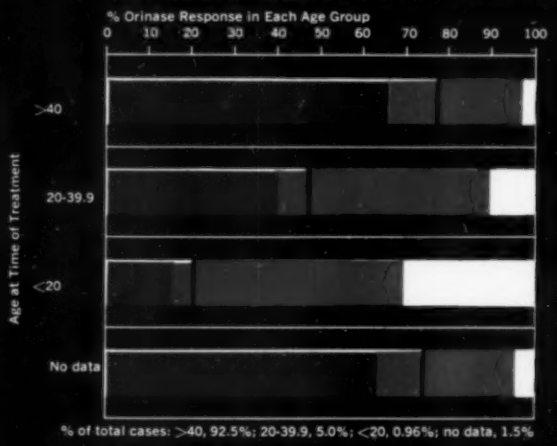
It is evident that the likelihood of a satisfactory response to Orinase therapy is greatest in patients whose diabetes developed after the age of 40. Nevertheless, at least 2 out of 5 diabetics who are diagnosed between the ages of 20 and 40 can achieve good to excellent control on Orinase.

The satisfactory responses in some patients whose diabetes became manifest before the age of 20 may be explained by the fact that these were patients whose disease, while chronologically juvenile or growth-onset diabetes, behaved like the stable, maturity-onset form.

How does body build affect Orinase response?

Body build does not seem to be a major determinant of response to Orinase therapy. While a somewhat lesser incidence of satisfactory control was found in those patients of asthenic body build, there was no difference in the incidence of excellent and good control between those of medium and obese physique.

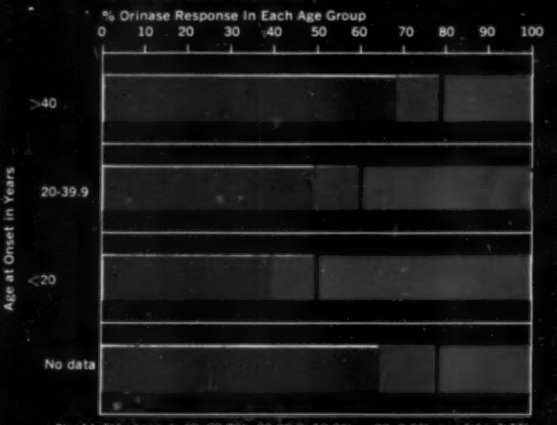
Table I. Age Distribution at Time of Treatment and Correlation with Orinase Response



% of total cases: >40, 92.5%; 20-39.9, 5.0%; <20, 0.96%; no data, 1.5%

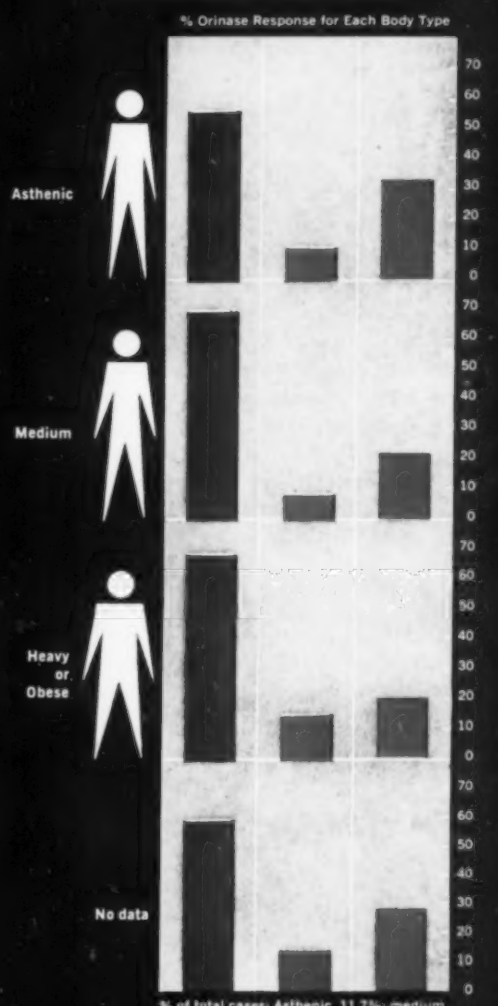
Throughout this report, the character of a patient's diabetes control prior to and after institution of Orinase therapy is classified as "excellent," "good," "fair," "poor," or "failure," according to the assessment of laboratory and clinical findings.

Table II. Correlation of Orinase Response with Age at Time of Onset of Diabetes



% of total cases: >40, 83.7%; 20-39.9, 12.2%; <20, 3.0%; no data, 1.1%

Table III. Distribution of Types of Body Build and Their Correlation with Orinase Response



% of total cases: Asthenic, 11.7%; medium, 45.0%; heavy or obese, 30.3%; no data, 13.0%

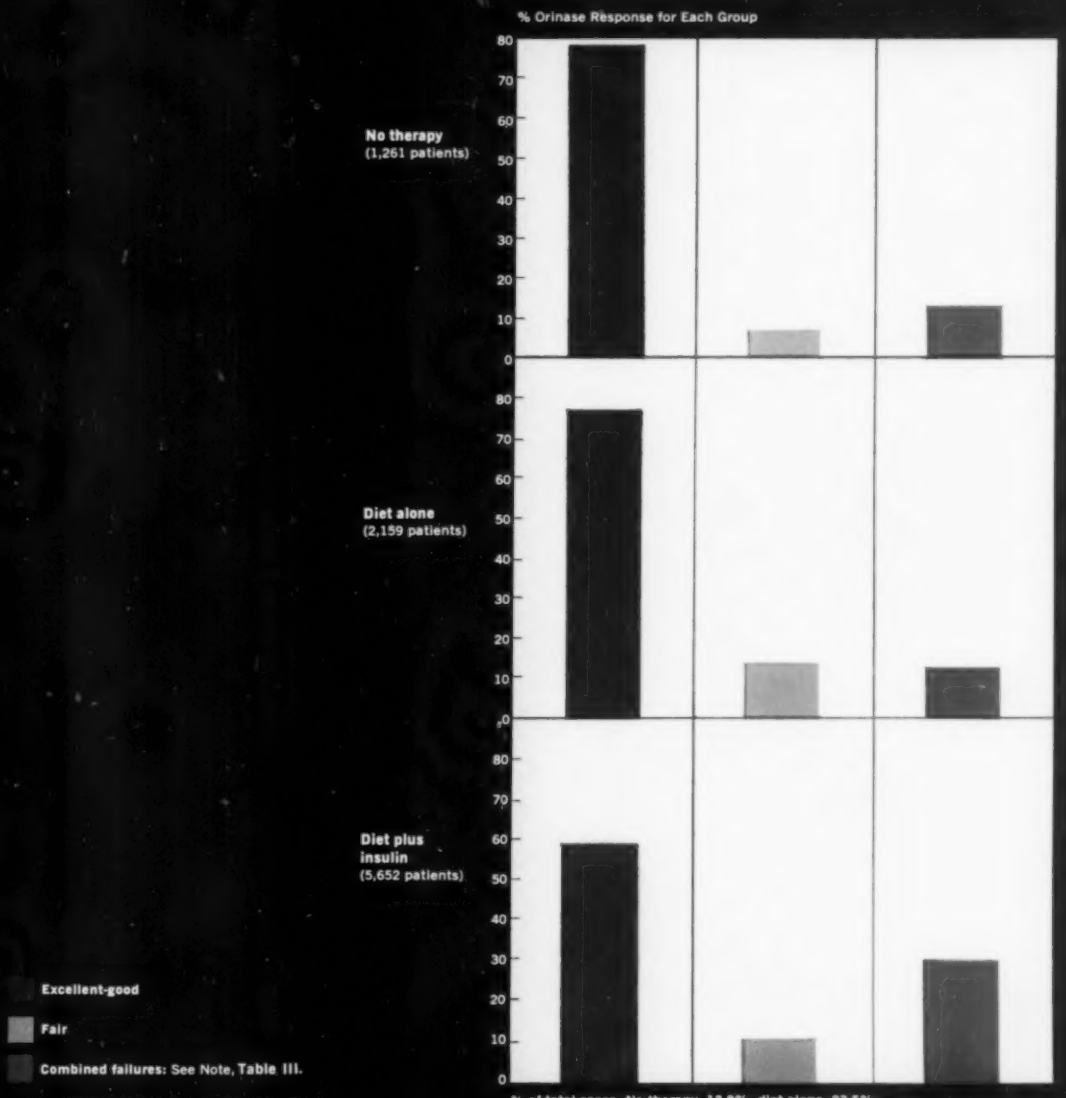


*Note: Combined failures include those patients who showed no initial response to a therapeutic trial of Orinase (primary failure) and those who after a period exceeding 1 month of satisfactory or fair control subsequently lost responsiveness to oral therapy (secondary failure). Of the total of 468 instances of secondary failure (5.1%) in the entire series of patients under study, only 222 cases of idiopathic secondary failure (2.4%) occurred. The other 246 could be readily attributed to gross dietary negligence, intercurrent infection (pneumonia, acute pyelonephritis, rectal abscess, etc.) or a severe emotional upset (death of a spouse, etc.).

How does previous management correlate with the subsequent response to Orinase?

Patients who had previously been on no routine of treatment at all responded just about the same to Orinase as those who had been maintained on diet alone. The insulin-treated group produced a lesser incidence of highly satisfactory control, as would be expected with patients exhibiting a more severe form of diabetes. Further analysis of the diet-treated and the insulin-treated groups follows.

Table IV. Correlation of Prior Therapeutic Status with Orinase Response



% of total cases: No therapy, 13.8%; diet alone, 23.5%; diet plus insulin, 61.7%; unreported, 1%.

What results can be anticipated when diet-treated diabetics are converted to Orinase?

It is evident that better control of diabetes can be achieved with Orinase than by diet alone.

What results can be anticipated when insulin-treated patients are converted to Orinase?

Of 5,233 patients previously treated with insulin, a good to excellent response had been secured with injection therapy in 52.8% (2,819 patients). When these 2,819 patients were placed on Orinase, 73% (2,071 patients) still had a good to excellent response on the oral drug. Of even greater significance is the fact that almost half (49%) of the patients with no more than a fair response to insulin, and as many as 29% of those with a poor response to insulin, experienced an obvious upgrading in quality of blood sugar control to good or excellent status when switched to Orinase.

Table V. Correlation of Quality of Control by Diet Alone with Subsequent Response to Orinase Therapy

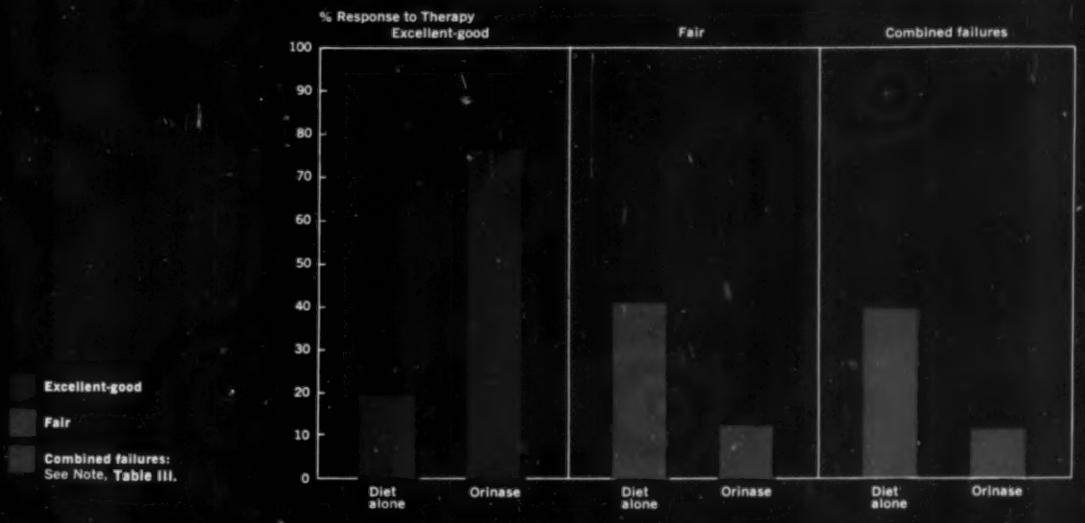
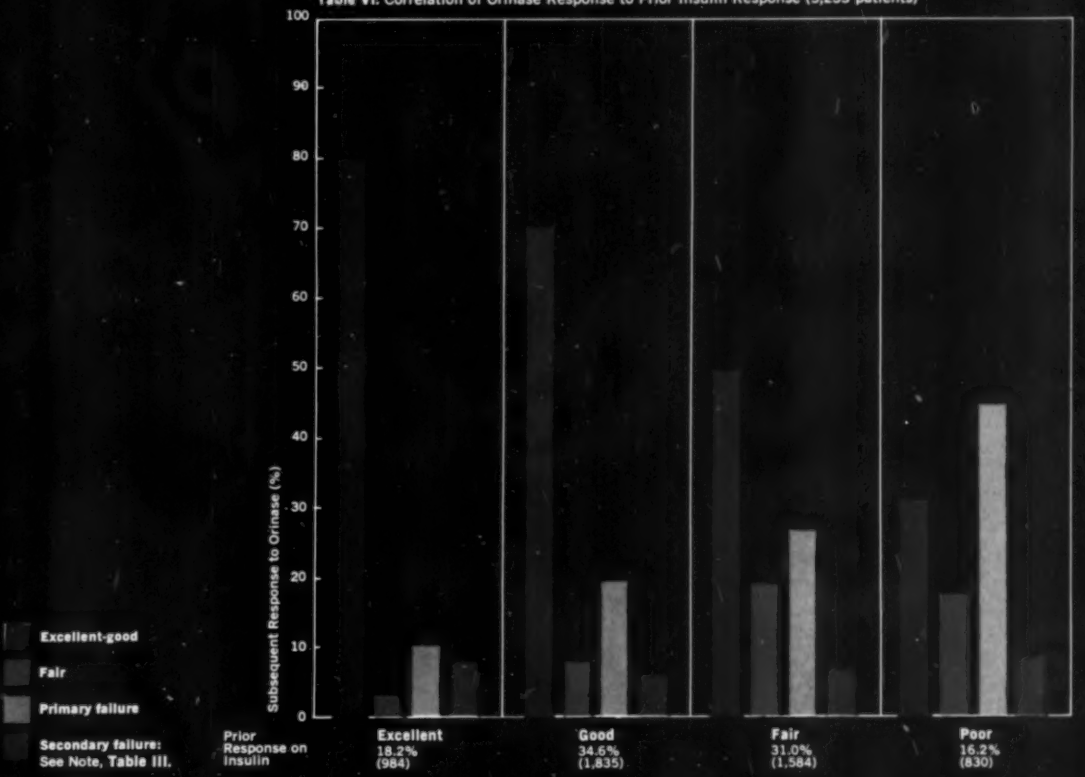


Table VI. Correlation of Orinase Response to Prior Insulin Response (5,233 patients)



How does previous insulin dosage affect the response to Orinase?

As the insulin requirement of a diabetic patient often serves as a rough index of the severity of his disease, it is not surprising to find that the frequency of successful response to Orinase therapy is significantly higher with lesser insulin requirements. Nonetheless, almost half of the patients requiring 31-40 units of insulin daily secured a good to excellent response when switched to Orinase.

How does the duration of prior insulin therapy affect Orinase response?

The duration of previous therapy on insulin does not seriously limit the successful use of Orinase.

Table VII. Correlation of Prior Insulin Dose with Orinase Response

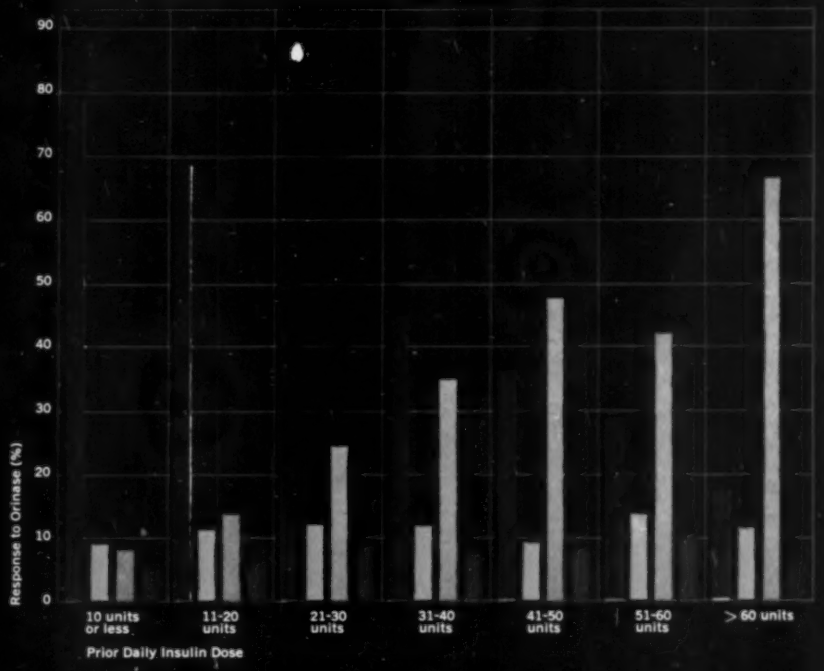
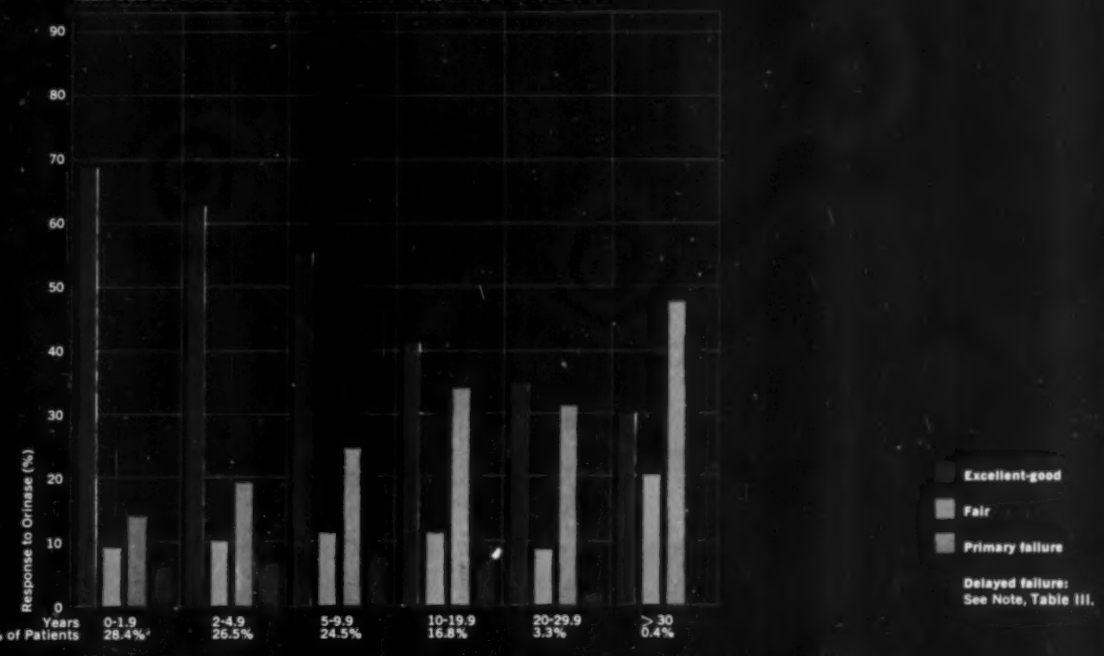


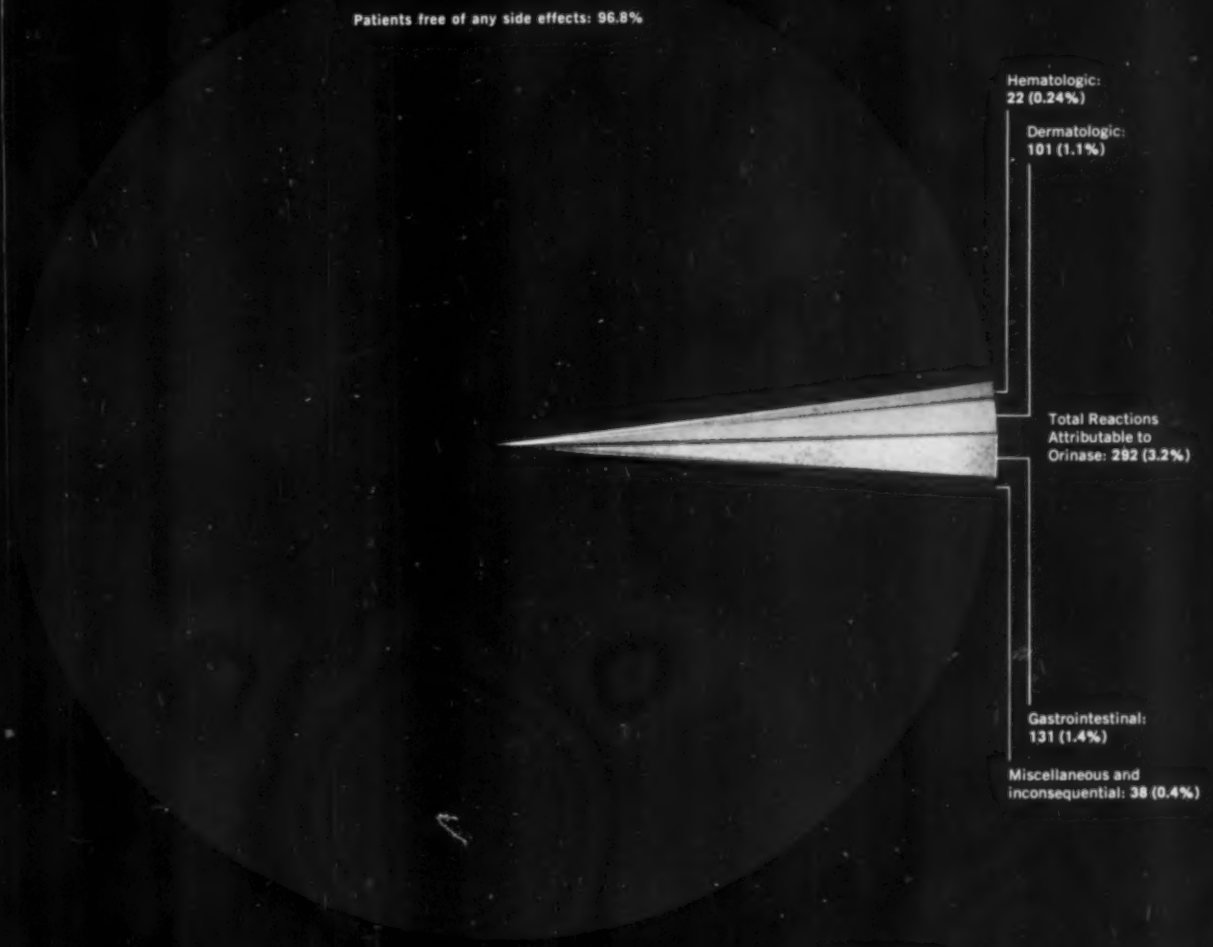
Table VIII. Correlation of Duration of Insulin Therapy with Orinase Response



What is the incidence of side effects associated with Orinase?

A total of 292 reactions was reported to have occurred in the course of Orinase administration, representing a gross reaction incidence of 3.2%. Withdrawal of Orinase was considered necessary in only 140 instances, or 1.53% of the total series. The significance of this low incidence is heightened by the fact that 57% of the 9,168 patients in this analysis were maintained on Orinase therapy for a minimum of 6 months to more than 28 months.

Table IX. Summary of Side Effects Reported as Occurring in Association with the Use of Orinase



Type of Reaction	Total Cases	Orinase Therapy: Continued	Orinase Therapy: Interrupted	Orinase Therapy: Discontinued	Disposition Unreported
Hematologic	22 (0.24%)	9	2	11 (0.12%)	0
Dermatologic	101 (1.1%)	36	14	48 (0.52%)	3
Gastrointestinal	131 (1.4%)	53	14	63 (0.7%)	1
Hepatic	0	–	–	–	–
Renal	0	–	–	–	–
Thyroid	0	–	–	–	–
Miscellaneous and inconsequential	38 (0.4%)	16	3	18 (0.2%)	1
Total Reactions Attributable to Orinase	292 (3.2%)				
Total Reactions for which Orinase Discontinued				140 (1.53%)	

Better control of diabetes

Orinase-responsive patients show more stable blood sugar levels and less glycosuria on Orinase than on insulin. Because Orinase acts via *endogenous* insulin, daily control of diabetes is smoother; "peaks and valleys" typical of exogenous insulin are leveled out.

Objective advantages

Greater freedom from hypoglycemia

Orinase is a true *eu*glycemic agent, once maintenance dosage has been established, it lowers blood sugar to normal levels, but almost never below normal. And because Orinase is rapidly inactivated in the body, drug levels never cumulate.

Better blood sugar control

Many patients who respond poorly to insulin experience marked improvement of blood sugar control when they are transferred to Orinase. Even in certain labile diabetics, who cannot be controlled on Orinase alone, the use of Orinase as a supplement to insulin therapy may effect stabilization of the diabetic condition and permit a reduction in insulin dosage.

Side effects— few and minor

Side effects attributable to Orinase occur in about 3% of cases, and only half of these necessitate withdrawal of Orinase. Most common are mild gastrointestinal upsets or transient skin rash.

No known toxicity

Careful observations of large series of patients maintained on Orinase for more than two years revealed no damage to the liver, blood, kidneys, or pancreas. Orinase is not goitrogenic.

Painless management of diabetes

Simple, easy, oral administration eliminates subcutaneous fat atrophy and frequent allergic reactions to insulin.

No increase in insulin requirements

Even after prolonged Orinase therapy, patients scarcely ever show any increase in insulin requirements. In fact, such increase on Orinase is *less common than on insulin.*

No impairment of diabetic status

Orinase therapy does not aggravate the underlying diabetic pathology. No evidence of aggravation of retinopathy, nephropathy, or neuropathy has been found.

Orinase tends to restore emotional balance

Diagnosis of diabetes, usually coming late in life and carrying with it a long sentence of daily fear and anxiety, profoundly upsets the emotional balance of the average patient. Adjustment to radical changes in daily living is difficult. Daily injections, special meal schedules, and new limitations on activities make the patient feel "set apart." Oral therapy simplifies life, brings it closer to normal, helps restore a cheerful, hopeful outlook.

Subjective advantages

Sense of personal freedom regained on Orinase

No longer tied to sterilizing apparatus, nearest restaurant, and rigid schedules, a diabetic on Orinase can enjoy travel and a variety of personal activities, free from the tyranny of the clock and the threat of hypoglycemia.

Orinase makes diabetes easier on the patient's family

With no dependence on members of the family for diabetic care, the patient can resume a more normal place in the family circle.

Orinase permits occupational continuity

Because of the hazards of hypoglycemic shock which may attend the use of insulin, some diabetics are forced to give up their customary occupations, or must limit and curtail their working hours—as may be the case with traveling salesmen, business executives, and others with unpredictable work schedules. On Orinase, patients usually can continue their normal occupations.

Normal social life made possible by Orinase

"Orinase-positive" diabetics can visit their friends, without the embarrassing necessity of meals at special hours...can participate in community life and social events in a more normal fashion.

Stability and sense of well-being on Orinase

Patients report an increased sense of stability and well-being...they are less irritable...their mood and outlook are improved.

ORINASE

BREAKTHROUGH / IN DIABETES

Orinase prescription information

Indications: Uncomplicated diabetes mellitus of the stable, maturity-onset type. In addition, in certain patients with labile diabetes the diabetic condition may be stabilized and the insulin dosage reduced when Orinase is used to supplement insulin therapy.

Dosage: As with insulin there is no fixed dosage regimen. A suggested dosage schedule for beginning therapy with Orinase is as follows:

First day	6 tablets
Second day	4 tablets
Third day	2 tablets

The dosage should then be adjusted (increased or decreased) to maintenance level.

Usual maintenance dose	1-3 tablets

To change from insulin to Orinase:
If previous dose was:

20 units or less:	Insulin therapy may be abruptly discontinued and Orinase therapy initiated.
20-40 units:	Initiate Orinase therapy with a concurrent 30-50% reduction in insulin dose with further daily reduction of insulin as response to Orinase is observed.
Above 40 units:	Initiate Orinase therapy in conjunction with 20% reduction in insulin dose the first day, with further careful reduction of insulin as response to Orinase is observed. For the occasional patient in this category it may be advisable to consider hospitalization during the conversion period.

Prior to using Orinase in selected patients, the physician should perform a complete physical examination and indicated laboratory studies. During the initial test period the patient should test his urine for sugar and ketone bodies and report the results to his physician daily. Once the maintenance dose has been established the patient should be examined at monthly intervals, or more frequently as indicated.

The patient should be instructed to report immediately to his physician if he does not feel as well as usual.

It is especially important that the patient, because of the simplicity and ease of administration of Orinase, does not develop a careless attitude ("cheating" on his diet, for example) which may result in serious consequences and failure of treatment.

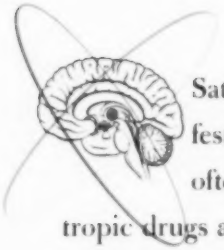
Supplied: in 0.5 Gm. scored tablets, bottles of 50.

Complete literature available on request.

ORINASE CASE STUDY (CONTINUED)

EVIDENCE OF [illegible] HARD REACTION

Upjohn



new concept

Satisfactory modification of the manifestations of abnormal brain activity is often achieved with individual psychotropic drugs acting on a single sector of the brain. In many patients, however, and despite high dosages, or change to another agent, response is only partial and is associated with lethargy and other more undesirable by-effects. Investigators have postulated that agents which will simultaneously alter the activity of more than one sector of the brain might produce a more satisfactory modification of undesirable emotional and behavioral patterns, thereby promoting a greatly improved total patient-response. To test this theory investigators recently have administered a low dosage of promazine, a phenothiazine, with a low dosage of meprobamate. The enhanced beneficial response elicited by this low-dosage dual attack is provided by PROZINE and warrants your consideration.

PROZINE

new agent

PROZINE*

meprobamate and promazine hydrochloride, Wyeth

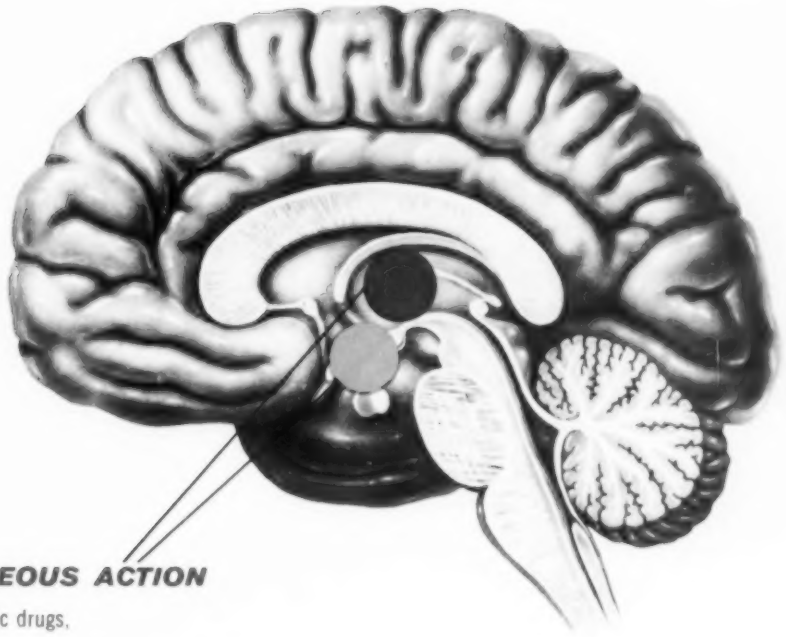
SPECIFIC CONTROL THROUGH DUAL ACTION

PROZINE controls anxiety and tension as well as motor excitability. This effect on the components of emotional reaction is possible because of the dual sites of action of PROZINE—the thalamic and hypothalamic areas of the brain. The unique dual action of PROZINE enables the physician to exert more specific control of emotionally disturbed patients. PROZINE is indicated in patients with a primary emotional disturbance, in patients with emotional disturbance unrelated to their organic disease, and in patients emotionally disturbed by primary organic disease.

PROZINE controls moderate to severe emotional disturbance manifested by apprehension and agitation, insomnia, depression, nausea and vomiting, gastrointestinal disturbances, alcoholism, menopausal symptoms, or premenstrual tension.

PROZINE in the recommended dosage (1 or 2 capsules, 3 or 4 times daily) produces more specific control than is obtainable with high doses of other ataractic agents. The benefits of a low-dosage regimen are unmistakable.

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SIMULTANEOUS ACTION
of two psychotropic drugs,
affecting two areas
of the brain, produces
more ***SPECIFIC CONTROL***

thus

in emotionally disturbed patients on PROZINE the dose required is diminished to the point where the incidence of side-effects and toxicity reactions is minimal and the patient is calm, tranquil, and amenable to additional therapy, whether it be educational, medical, or psychiatric.

PROZINE



PROZINE

SPECIFIC CONTROL THROUGH DUAL ACTION

The physician will see many applications for PROZINE in his day to day practice, particularly in overly apprehensive medical patients (including surgical and obstetrical cases) and in the management of emotional problems of children, adolescents and the aged; also in emotionally disturbed patients who receive little or no relief from analgesics, barbiturates, anticholinergics, antihypertensives, hormones (estrogens and corticoids). The dosages of these drugs may be dramatically reduced.



SUPPLIED: PROZINE—Bottles of 50 capsules. Each green and white capsule contains 200 mg. meprobamate and 25 mg. promazine hydrochloride.

Comprehensive literature is available

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MODERN THERAPEUTICS

New therapies and significant clinical investigations reported in other journals

Advanced Cancer of the Breast Treated with Fluoxymesterone

Significantly, potent androgenic hormones useful in the treatment of advanced cancer of the breast have been limited to testosterone. Recently, a new halogenated corticosteroid, fluoxymesterone (Halotestin), has been synthesized. It has been claimed for this compound that it has a myotropic effect 22 times greater and an androgenic effect 8.5 times greater than that of similar agents. The author treated 15 patients with advanced cancer of the breast for periods of 31 to 540 days: Fluoxymesterone was the initial drug used in seven of the cases. It was given in oral doses of 10 mg. at first, then later changed to 20 mg. daily. Tests were made at stated intervals. Subjective improvement of some degree, consisting of a sense of wellbeing, increase of appetite, and a decrease of pain, was noted in six patients. The report further states that fluoxymesterone appears to be a potent androgen, and capable of producing objective remission in advanced cancer of the breast. The number of patients treated is not large, and it is premature to state that this steroid is superior to other androgens. It does seem probable to the author that this compound is at least as good as other effective androgens, and warrants further trial. It has the advantage of being an oral preparation which is well-tolerated in effective doses. It is not known if doses of more than 20 mg. daily would prove more efficacious, but no remissions were noted with doses lower than this amount in the present study. The usual effects of androgenic hormones were noted in most cases continuing therapy for more than one month, as evidenced by hirsutism, acne, increased libido, edema, and increased erythropoiesis, but the impression was gained that these effects were slower to develop and not of such magnitude as develop with other agents. Acne was minimal, and hair growth was moderate even in patients to whom the drug was administered for several months.

KENNETH B. OLSON, M.D.
New York State Journal of Medicine

Anti-Bacterial Effects of Ristocetin

Ristocetin has been found to be effective against bacteria that have developed resistance to other antibiotics. It is poorly absorbed from the intestinal tract, and consequently is administered by the intravenous route. The present report describes the use of the drug when administered to four patients who were critically ill; two were moribund and suffering from massive bacterial infection. All four had failed to respond to routinely used antibiotics. In Case I, the patient had sustained an injury to the knee which rapidly developed pain and swelling. Cultures of blood, aspirated material from the knee, from the urine, and from the sputum showed *Staphylococcus aureus, Pseudumonas aeruginosa,* and *Candida albicans.* Over a three-day period, 12 grams of Ristocetin

Continued on page 188a

were administered, however, the authors report that a dramatic change for the better had taken place within 12 hours. A second patient had diabetes complicated by staphylococcal septicemia with multiple staphylococcal abscesses. After failure to respond to several antibiotics, his condition improved rapidly after the administration of Ristocetin and surgical drainage of the absecces. A patient in acute septicemic shock showed remarkable improvement after the administration of 2 grams of Ristocetin daily for five days. A fourth patient developed febrile episodes and an increasingly deteriorated condition four months after an aortic valvulotomy. He received 3.5 grams of Ristocetin for four days: 3 grams for two days, and 2 grams for five days: recovery followed. As used, the dosage of Ristocetin has been approximately 25 mg. per kg. of body weight, a level that has been therapeutically effective and free from serious side-effects.

C. E. VAN ROOYEN, M.D., ALAN J. MAC LEOD, M.D. and GARTH EMBREE, M.D.
Canadian Medical Assn.-Journal

Phenyltoloxamine as a Daytime Tranquilizer

The sedative properties, tolerance, and safety of phenyltoloxamine, a well known antihistaminic, were studied in ambulatory patients who required sedative medication for control of the anxiety state. This usually took the form of daytime nervousness, jitteriness, apprehension, easy excitability, functional gastrointestinal distress, palpitations, and breathlessness. Heretofore, the sedative effect of antihistaminic agents

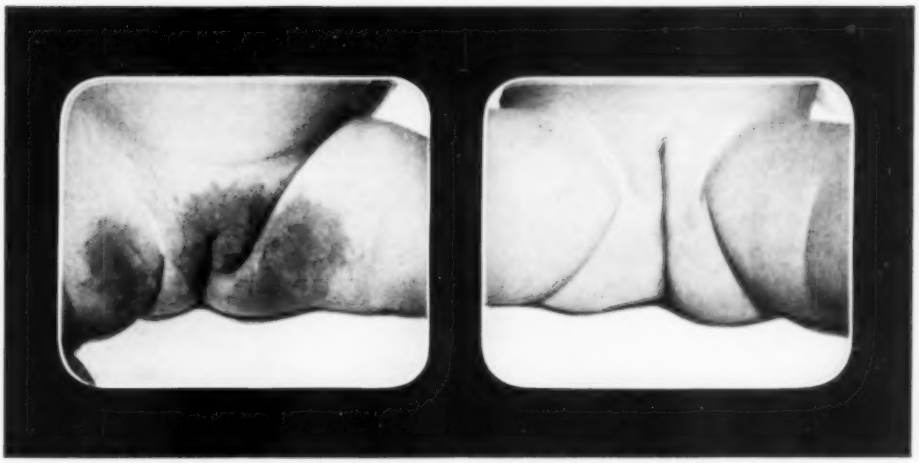
Continued on page 190a

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had been considered an untoward reaction. Emphasis had been on a somnifacient effect which might result in hypnosis in certain patients. Little attention had been paid to the possibility of the use of these medications as tranquilizers or daytime sedatives, where the lowest order of the sedative action is required. The report states that phenyltoloxamine is an excellent daytime sedative. The lesser effect of an hypnotic agent by multiple daytime doses confirms the low incidence of somnolence or somnifacient effect reported when the agent is used as an antihistaminic. Phenyltoloxamine three to four times daily for several weeks of continuous therapy is a safe daytime sedative. The higher doses, however, result in central nervous system depression, such as somnolence, so that clinically satisfactory daytime sedation may be overshadowed by symptoms which are actually sedative in nature. There was no evidence of any hypersensitivity manifestation, such as skin eruptions, liver dysfunction, alteration of blood elements, or urine constituents. Phenyltoloxamine in doses of 50 mg. three to four times daily was found by the authors to be a highly effective and safe daytime sedative.

ROBERT C. BATTERMAN, M.D., ET AL.
New York State Journal of Medicine

Hydrocortisone in Combination for Treating Skin Disorders

Iodochlorhydroxyquin used topically has been shown to be effective medication in many dermatologic conditions. It is readily tolerated, is nontoxic and has a low sensitizing index. Hydrocortisone, when used for skin disorders, proved valuable in reducing pruritus and in-

Continued on page 192a



From the first incision, the surgeon can be confident that his patient, when prepared with SULFASUXIDINE, has extensive protection against secondary infection, peritonitis, or abscesses from bowel pathogens.

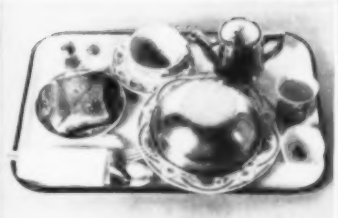
Daily dosage: Adults—4½ to 6 tablets six times daily.

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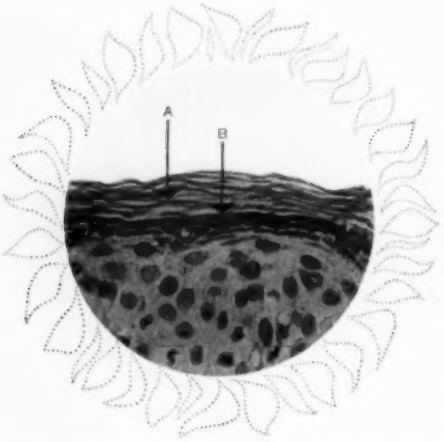
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OXSORALEN plus sunlight increases the density and thickness of the *stratum corneum* (A) and results in the development of a *stratum lucidum* (B) immediately beneath it. The barrier thus formed is of aid in protecting against ultraviolet radiation and prevents burning, blistering, and peeling. And as pigment granules ascend to the surface they are trapped by the compact, thickened layers, are not shed by peeling, and the skin takes on an accentuated suntanned appearance.

Write for comprehensive literature and patient instruction forms. Also consult Physicians' Desk Reference, page 668.

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Fitzpatrick, T. B.; Imbra... Effect of Methoxsalen on ... J.A.M.A. 167:1586-1589, (Ju... Sulzberger, M. B., and Lerner, ... Suntanning-Potentiation with Ora... Medication. J.A.M.A. 167:2077, 195... Becker, S. W., Jr.: Effects of 8-Methox... Light in Human Skin. Science, 127:878, [illegible]... Daniels, F., Jr.; Hopkins, C. E., and Fitzpatrick, ... (8-Methoxypsoralen) on Sunburn and Suntan. A.s...

flammation, but was thought to favor bacterial growth, a fact never categorically proven. However, it has been used when combined with antibacterial agents. The authors report that good results were obtained when a combination of iodochlorhydroxyquin and hydrocortisone was used as an anti-inflammatory agent in seborrheic dermatitis and later the effectiveness of this combination was established in a variety of dermatologic conditions. In lotion or ointment form this medication was particularly valuable when secondary infection was present and a product with a low sensitizing index was required. The authors used these drugs in combination in a water-washable lotion base and in a petrolatum ointment base and good to fair results were obtained in 63 of 69 cases. Irritation from the medication was noted in only two instances. Both lotion and ointment produced good results in most of the dermatoses treated. The lotion was particularly useful in cases of seborrheic dermatitis involving the external ear canal. The ointment was used by many patients with contact dematitis in which vesiculation was not a prominent factor, and uniformly good results were obtained. Vesicular eruptions benefitted from the added drying action of the lotion.

ROYAL M. MONTGOMERY, M.D., AND
WILLIAM M. LAVETTE, M.D.
Clinical Medicine

Psychotic Epileptics Treated with Reserpine-Methylphenidate

After a pilot study of 16 weeks, the authors state that a group of psychotic epileptic patients were remarkably improved after a course of reserpine-methylphenidate therapy. Personality changes made the patients more accessible for activities, recreation, and other interpersonal socialization. The study was continued for a period of 15 months, and included 30 women whose period of hospitalization extended from one month to 30 years. Nineteen of the patients

were diagnosed as having chronic brain syndrome associated with convulsive disorder. Symptoms of hyperactivity, overtalkativeness, assaultiveness, destructiveness, agitation, and tension as well as convulsive seizures were rated daily during the study by the nurses in charge of the ward.

Initially, the patients were given only 4 milligrams of reserpine, in a single dose, daily and 30 milligrams of methylphenidate twice daily. The amount of reserpine was not well tolerated by the patients, and the daily dosage was reduced to 2-3 milligrams. As the study progressed, it was found advisable to return the anti-convulsant therapy to the daily regimen, but the former dosage was halved. The personality characteristics of all 30 patients changed remarkably during the study. The five rated symptom categories decreased during the study to the point of being absent in most of the patients, and mild in the others. Interpersonal relationships were greatly improved, and the patients were more accessible toward occupational therapy activities and recreation. The most significant aspect of the change in behavior was noted when placebos were substituted for the reserpine and methylphenidate. By the fifth day, the picture had reverted to that existing prior to beginning the study. With resumption of the reserpine and methylphenidate the peace and quiet in the ward returned, and the incidence of convulsions had again decreased. The report continues that it is not to be inferred that reserpine-methylphenidate are specific anti-convulsant in epilepsy. However, when the epileptic patient is properly tranquilized, the emotional releases manifested as seizures are less likely—hence anti-convulsant medication can be reduced.

G. DONALD NISWANDER, M.D. and
EARL K. HOLT, M.D.
Diseases of the Nervous System



Office Patients Treated with Prozine

General practioners and specialists alike can describe thousands of cases that emphasize the soundness of one basic medical precept—that it is essential to treat the total patient—his emotional as well as his physical illness. The ataractic agents have all been of more or less value in the management of such emotional conditions. Most of the work in the field of ataractic treatment concerns use of these compounds in an institutional setting. There is considerable need for more extensive information on the use of the ataractic agents in nonhospitalized patients, and on meprobamate in particular, since this agent appears of greatest value for the type of patient usually seen in office practice.

While good results followed the administration of meprobamate, and it was found to be superior to the barbiturates for control of the ordinary nervous tension that accompanies physical illness, the author did not find it completely satisfactory. When prolonged treatment was required, side-effects became a definite factor. It was therefore decided to substitute a combination of meprobamate with promazine, an unchlorinated phenothiazine, to control the more erratic elements of the

Continued on the following page

behavior pattern: the combination has been made available as Prozine. Treatment ranged from two and one-half to 16 weeks: 89 persons were included in the investigation. The author reports that ninety-two percent were completely relieved of all nervousness, insomnia, and other symptoms of emotional tension. Eight percent experienced a satisfactory reduction of nervous symptoms but some residual emotional stress persisted. Analgesics, when necessary, could be administered in significantly reduced dosage, and usually were given only during the first two days of treatment. Rather to the author's surprise, it was found that the promazine content of the capsules was effective for the control of emesis. Nausea and vomiting were checked in all cases on the first day of medication. The only side-effect, drowsiness, occurred in one patient.

ROSS V. PARKS, M.D.

International Record of Medicine

Chronic Psychoses Treated with Dartal

Seventy-one chronically psychotic women who had failed to respond to other therapeutic measures were treated with Dartal, a new phenothiazine derivative. While the majority of the patients were diagnosed as schizophrenic, there were eight cases of manic depressive psychosis, and four with involutional psychotic reactions. Dartal in tablet form was given in doses of 10 mg. twice daily at first. This was increased after three days to 20 mg. twice daily. The maximum amount given was 75 mg. daily. Usually, a maintenance dosage of 10 to 20 mg. daily, taken at bedtime, was sufficient. When the optimum dosage level was reached, treatment was continued from four weeks to seventeen months. The duration of treatment must be determined for the individual patient. Patients who were benefited by Dartal showed improvement within two to four

Concluded on page 196a



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weeks. The relapse rate after discontinuation of the drug was fairly high. On the whole, the normalizing influence of Dartal was evident by increased patient cooperation, and a reduction in agitation, tension, delusions, and other manifestations of psychosis. Hostility reactions, combativeness and destructiveness were supplanted by less aggressive behavior. The results of therapy were graded as: clinical recovery, 11 percent; marked improvement, 25 percent; moderate improvement, 28 percent, and slight improvement, 11 percent. Few side-effects were noted—these were mild in nature.

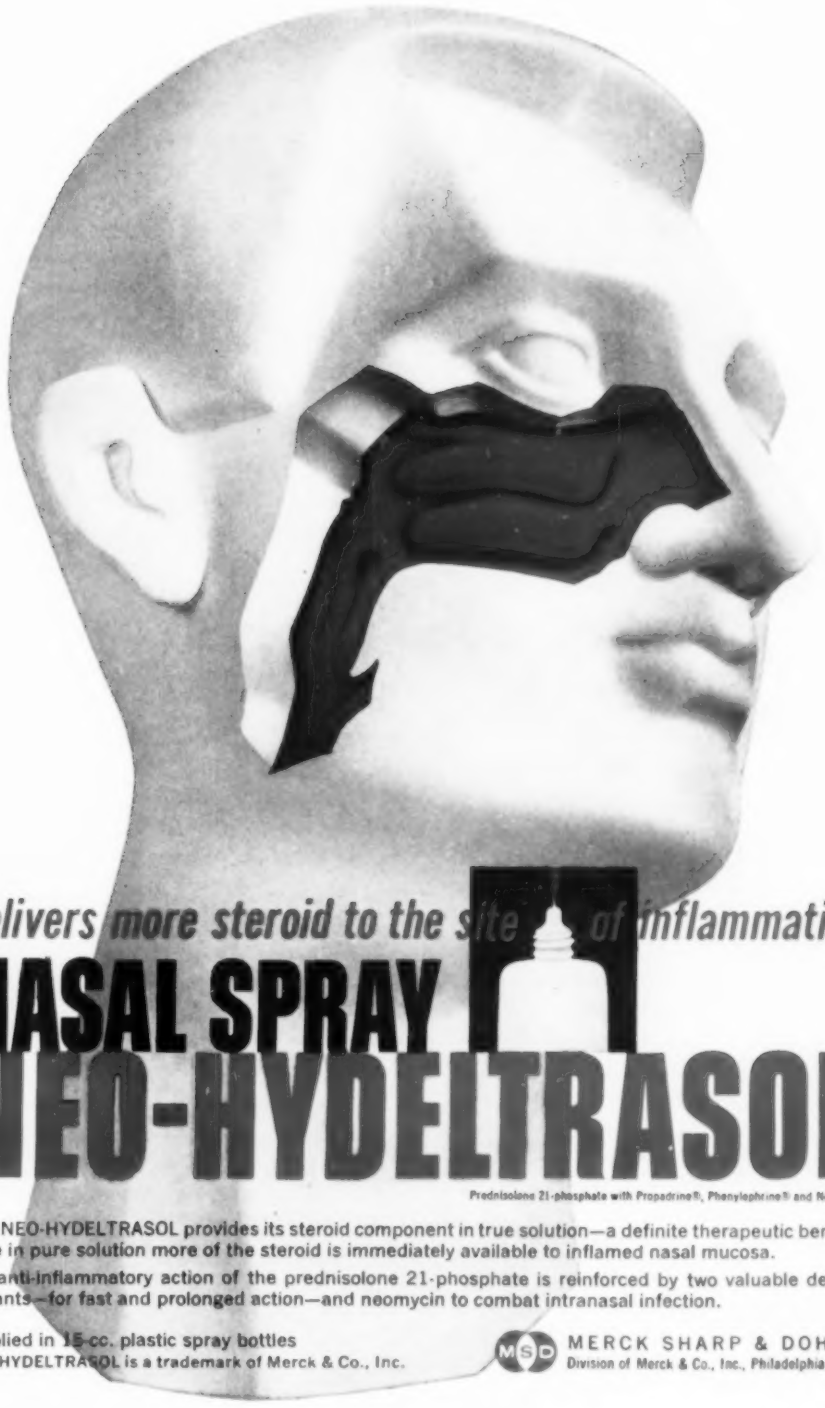
PAULA T. FERRAND, M.D.
Minnesota Medicine

Anxiety States Treated with Hydroxyzine Hydrochloride

One of the newer and chemically different ataractic drugs is hydroxyzine hydrochloride, a preparation reported to have a low toxicity. It has been employed for treating a number of emotional and mental disorders, mostly of a neurotic rather than a psychotic nature. Its therapeutic effect on psychotic patients is currently being investigated. Of the group studied, 93 patients were classed as psychoneurotics, and the conditions of the remaining persons were hypochondriasis, alcoholism, melancholia, and the menopausal syndrome. Hydroxyzine hydrochloride was administered in 10- or 25-mg. coated tablets. It was found that the requirement of medication when the symptoms were intense was 25 or 50 mg. two to three times daily. Less severe conditions were controlled with 10 mg. two to four times a day. The period of treatment varied from two weeks to 18 months. The author states that results of treatment were good to excellent in 89.5 percent of the patients. A number of individuals with anxiety neuroses stated that they had "immediate relief" from tension. Side-effects encountered were transitory and not of a serious nature. Four patients complained of drowsiness which subsided when a proper dosage of the drug was found. Two patients complained of excessive dreams, and one of cramps in the legs, symptoms not necessarily a result of the hydroxyzine.

RUDOLPH C. GARBER, JR., M.D.
Journal of the Florida Medical Assn.





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Continued on page 200a

YESTERDAY, A COUGH SPOILED HIS DRAWING

TODAY HIS COUGH IS UNDER CONTROL

WITH

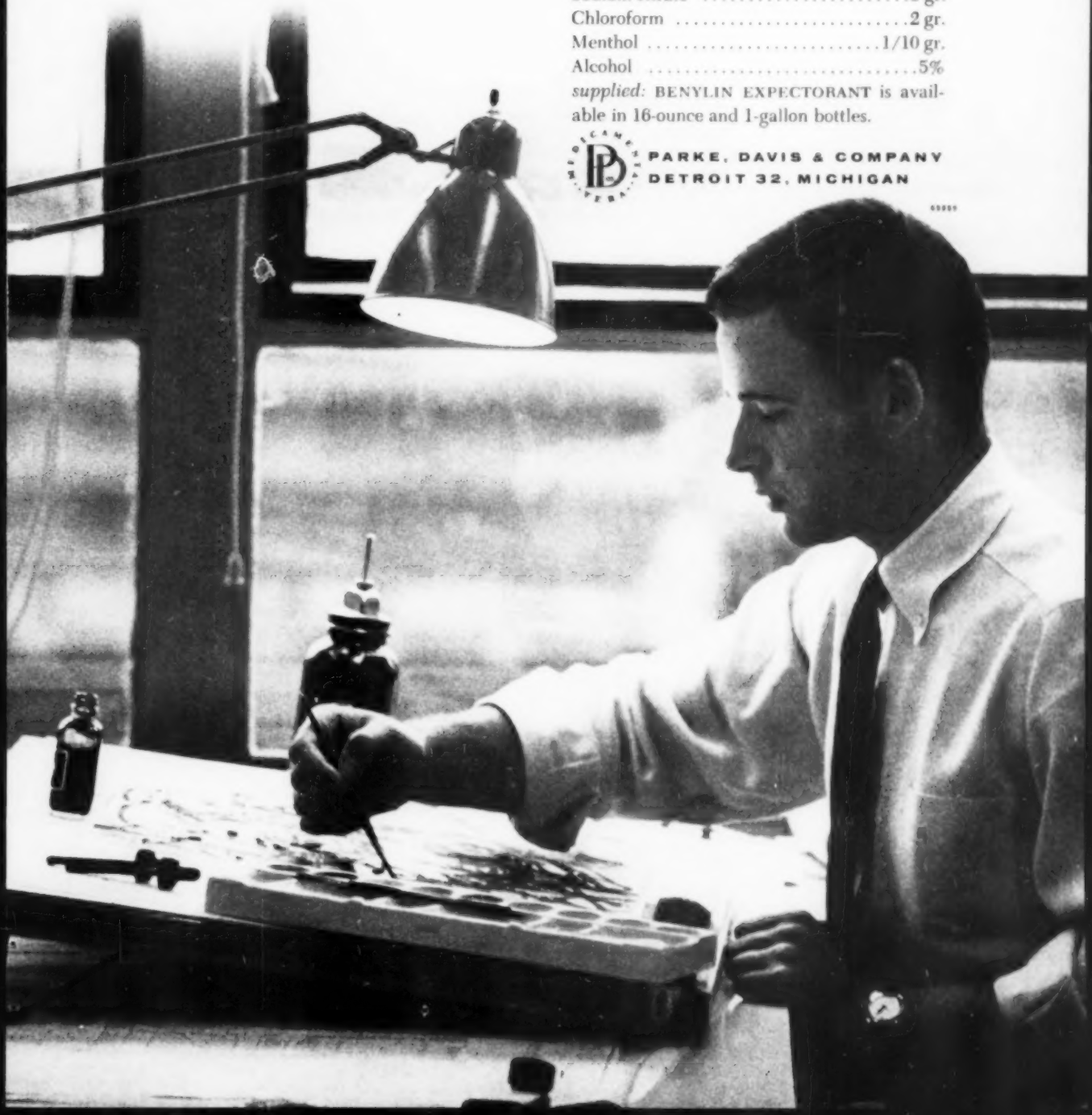
BENYLIN®
EXPECTORANT

BENYLIN EXPECTORANT contains in each fluidounce:

Benadryl® hydrochloride (diphenhydramine hydrochloride, Parke-Davis)	80 mg.
Ammonium chloride	12 gr.
Sodium citrate	5 gr.
Chloroform	2 gr.
Menthol	1/10 gr.
Alcohol	5%

supplied: BENYLIN EXPECTORANT is available in 16-ounce and 1-gallon bottles.

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Continued on page 202a

SUCCESSFULLY TESTED AND USED BY PHYSICIANS IN 3 MAJOR CITIES FOR OVER TWO YEARS

the first
effervescent
bulk laxative

new

Effergel

EXCELLENT RESULTS—greater hydrophilic capacity without the feeling of fullness (gelling takes place in the intestine – not in the stomach). Low viscosity permits uniform distribution throughout intestinal contents.

PLEASANT TASTING—delightfully refreshing, lemon-flavored effervescent liquid assures patient cooperation.

FLEXIBLE—dosage can be varied according to the needs of adults, geriatrics, children, pre- and post-operative patients... everyone.

EASY-TO-TAKE—looks good. Really tastes good. Clear, attractive, effervescent drink.



CONTENTS:

Each 7 Gm. (approximately 1 rounded teaspoonful) provides:
Sodium Carboxymethylcellulose . . . . 2 Gm.
Di(acetylhydroxyphenyl)isatin . . . . . 6 mg.
(chemically similar to the active principle of prunes)
Supplied: 9 oz. bottles at all pharmacies.

DOSAGE:

Adults: initially, 1 rounded teaspoonful in a glass of water, morning and night. Dosage may be increased or decreased to suit needs.

Children 3 years and over: initially, 1 level teaspoonful in one-half glass of water upon retiring. Subsequent dosage to be adjusted according to results.

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Continued on page 204a



"NOW
I HAVEN'T A THING
TO WEAR"

Obedrin®

and the 60-10-70 Basic Plan

provide a rational weight control regimen

When the optimum weight is reached—the maintenance of desired eating patterns is most important. Continuing support by the physician is necessary. Here, Obedrin and the 60-10-70 Plan can be valuable aids to both the physician and patient.

FORMULA: *tablets and capsules*

Semoxydrine® HCl (Methamphetamine HCl)	5 mg.
Pentobarbital	20 mg.
Ascorbic Acid	100 mg.
Thiamine Mononitrate	0.5 mg.
Riboflavin	1 mg.
Nicotinic Acid	5 mg.



OBEDRIN PROVIDES:

Methamphetamine for its proven anorexigenic and mood-lifting effects.

Pentobarbital as a balancing agent, to guard against excitation.

Vitamins B_1 and B_2 plus niacin to supplement the diet.

Ascorbic acid to aid in the mobilization of tissue fluids.

Bristol, Tennessee · New York · Kansas City · San Francisco THE S. E. MASSENGILL COMPANY

for effective timing...a flexible dosage form

tablets or capsules



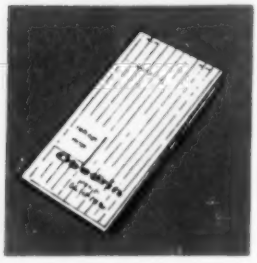
LUNCH DINNER EVENING SNACK

Obedrin tablets or capsules provide a flexible dosage form which may be prescribed to depress the appetite at peak hunger periods.

The pentobarbital content assures control of excess central nervous stimulation, and the 60-10-70 Basic Plan provides for a balanced food intake with sufficient protein and roughage.

Obedrin is available in tablet and capsule form.

Currently, mailings will be forwarded only at your request. Write for 60-10-70 menus, weight charts, and samples of Obedrin



ADVANTAGES OF OBEDRIN

- An effective anorexigenic agent
- A flexible dosage form
- Minimal central nervous stimulation
- Vitamins to supplement the diet
- No hazards of impaction

Obedrin®

and the 60-10-70 Basic Plan

Bristol, Tennessee · New York · Kansas City · San Francisco **THE S. E. ASSENGILL COMPANY**

REACHING FOR THOSE 9B's NEARLY PUT ME ON THE SHELF...



Reaching for 9B shoes and other top shelf sizes is no joke . . . it gave me a terrible kink in my back.



Before the day was over, I could hardly stoop to push a shoehorn.



I called my doctor that night and picked up the tablets he prescribed.



The pain went away fast—in just 15 minutes—and I was back on the job the next morning! But not one 9B customer came in the whole day!

Percodan®-Demi & Percodan® *Tablets*

Salts of Dihydrohydroxycodeinone and Homatropine, plus APC

FOR PAIN

ACTS FASTER—usually within 5-15 minutes. **LASTS LONGER**—usually 6 hours or more. **MORE THOROUGH RELIEF**—permits uninterrupted sleep through the night. **RARELY CONSTIPATES**—excellent for chronic or bedridden patients. **VERSATILE**—new "demi" strength permits dosage flexibility to meet each patient's specific needs. PERCODAN-DEMI provides the PERCODAN formula with one-half the amount of salts of dihydrohydroxycodeinone and homatropine.

AVERAGE ADULT DOSE: 1 tablet every 6 hours. May be habit-forming. Federal law permits oral prescription.

Each PERCODAN® Tablet contains 4.50 mg. dihydrohydroxycodeinone hydrochloride, 0.38 mg. dihydrohydroxycodeinone terephthalate, 0.38 mg. homatropine terephthalate, 224 mg. acetylsalicylic acid, 160 mg. phenacetin, and 32 mg. caffeine.

AND THE PAIN WENT AWAY FAST

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Continued on page 208a

25,000,000 courses of treatment — and NO "resistance" problems

*Conservative estimate based on combined use of all FURACIN preparations since 1945.

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In clinical use for more than 12 years and today the most widely prescribed single topical antibacterial, FURACIN—like other nitrofurans—remains effective against pathogens which have developed, or are prone to develop, resistance to other antibacterial agents. There has been no evidence that originally sensitive strains of staphylococci or other bacteria lose their susceptibility to FURACIN in any significant degree.

the wide-spectrum antibacterial exclusively for topical use ... in dosage forms for every topical need

Available as Soluble Dressing, Soluble Powder, or Solution. Also in Vaginal and Urethral Suppositories and in special formulations for eye, ear and nose.

one of the unique nitrofurans— products of Eaton research

Eaton Laboratories, Norwich, New York

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1959	MARCH					1959
SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

27

MAR. 1959

sulfa

the tablet he took yesterday morning...



SATURDAY

1959 FEBRUARY 1959						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

28

MAR. 1959

1959 APRIL 1959						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

is still working this morning

Midicel®

(sulfamethoxypyridazine, Parke-Davis)

maintains effective sulfa levels for 24 hours with a single tablet

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References: **1.** Graham, W.: Canad. M. A. J. **79**:634 (Oct. 15) 1958. **2.** Robins, H. M.; Lockie, L. M.; Norcross, B.; Latona, S., and Riordan, D. J.: Am. Pract. Digest Treat. **8**:1758, 1957. **3.** Kuzell, W. C.; Schaffarzick, R. W.; Naugler, W. E., and Champlin, B. M.: New England J. Med. **256**:388, 1957.

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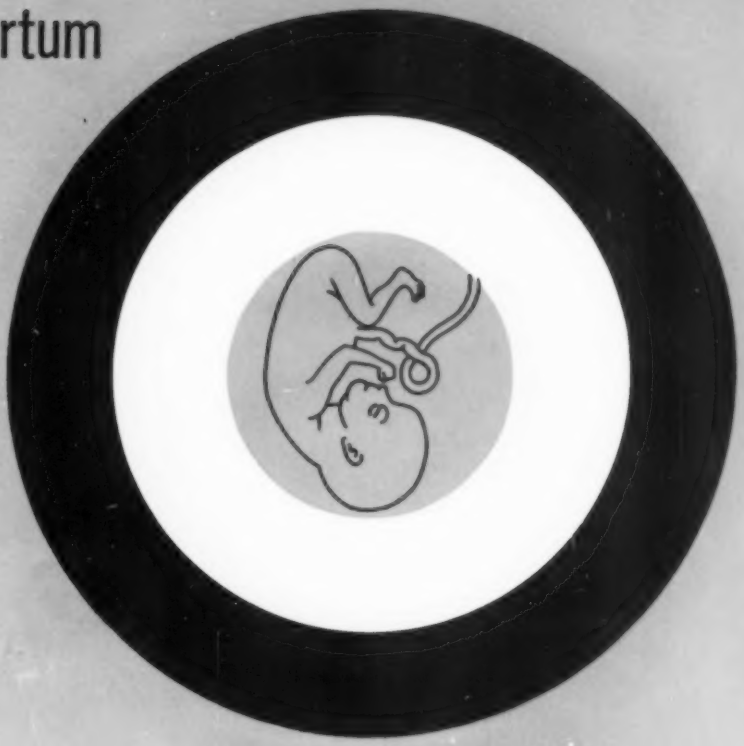
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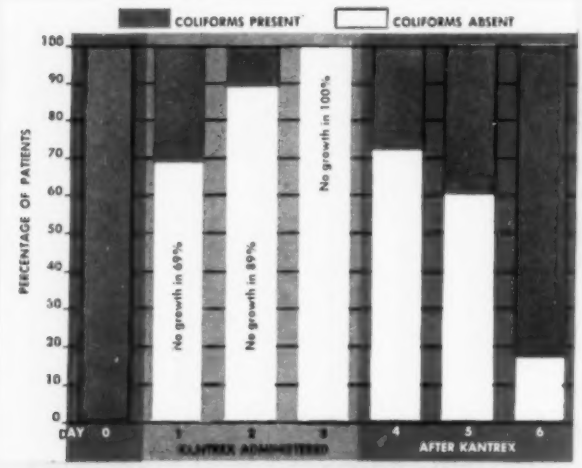
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References: **1.** Cohn, I., Jr.: Annals N. Y. Acad. Sci. 76:212, 1958. **2.** Cohn, I., Jr., and Longacre, A. B.: S. G. & O. 108:100, 1959. **3.** Finegold, S. M., *et al.*: Annals N. Y. Acad. Sci. 76:319, 1958.

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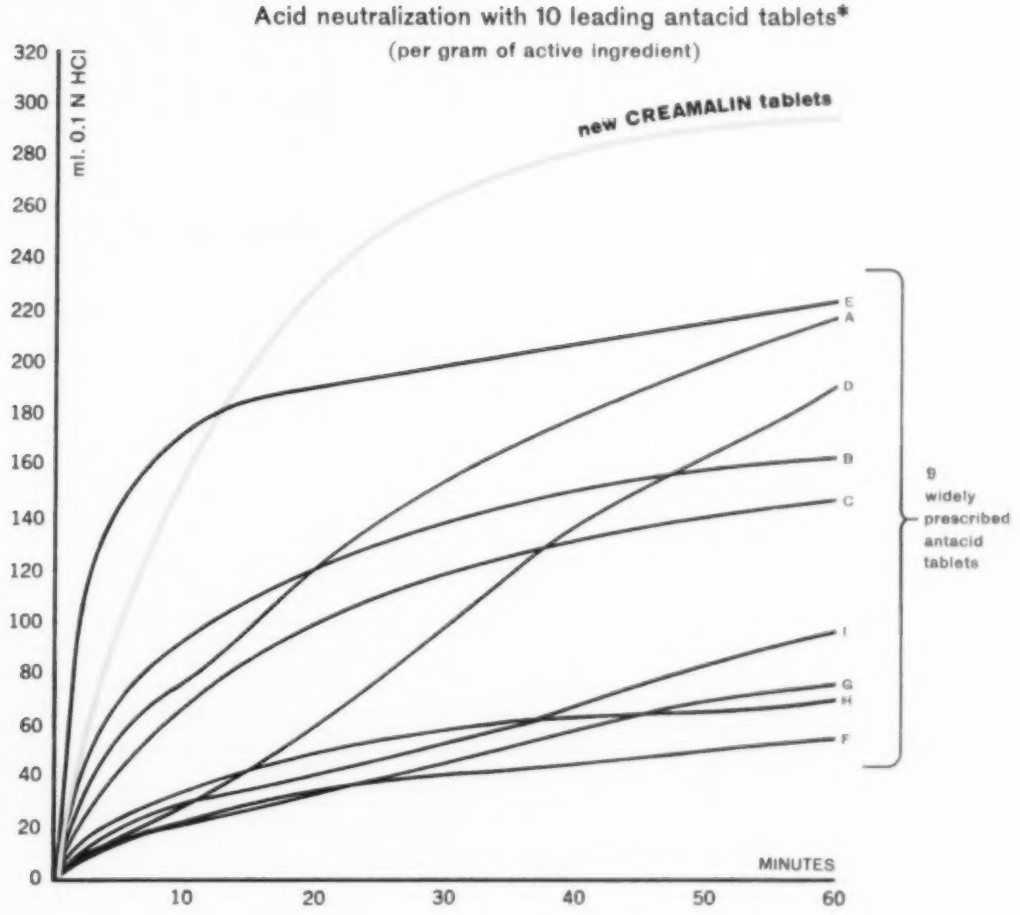
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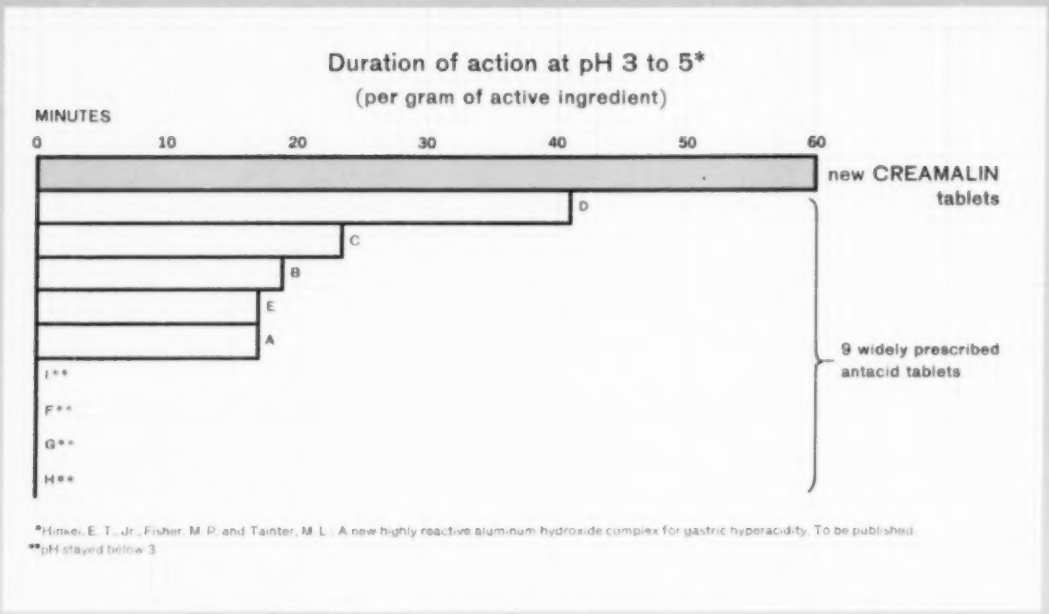


Tablets were powdered and suspended in distilled water in a constant temperature container (37°C) equipped with mechanical stirrer and pH electrodes. Hydrochloric acid was added as needed to maintain the pH at 3.5. Volume of acid required was recorded at frequent intervals for one hour.

*Hinkel, E. T., Jr., Fisher, M. P. and Tainter, M. L.: A new highly reactive aluminum hydroxide complex for gastric hyperacidity. To be published.

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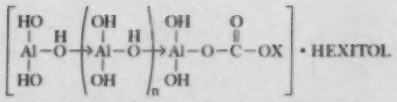


*Hinkel, E. T., Jr., Fisher, M. P. and Tainter, M. L.: A new highly reactive aluminum hydroxide complex for gastric hyperacidity. To be published.
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Composition: Each Creamalin Antacid Tablet contains 320 mg. specially processed, highly reactive, short polymer dried aluminum hydroxide gel, stabilized with hexitol, with 75 mg. magnesium hydroxide.

Adult Dosage: Gastric hyperacidity – 2 to 4 tablets as necessary. Peptic ulcer or gastritis – 2 to 4 tablets every two to four hours. Tablets may be chewed, swallowed with water or milk, or allowed to dissolve in the mouth.

Supplied: Bottles of 50, 100, 200 and 1000.

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NEWS AND NOTES

Selected items of current interest from the fields of medical research and education

Boxers' Cuts May Arise from Kidney Injuries

Many facial cuts suffered by boxers may come as a result of injury to the kidney area, sustained while fighting.

This theory was advanced by a New York physician in an article in the *Journal of the American Medical Association.*

Dr. Aaron H. Kleiman reached this conclusion following a three-year urologic study of 764 professional boxers participating in 150 events at Madison Square Garden and at St. Nicholas Arena in New York.

The study was undertaken to determine the correlation between hematuria (blood in the urine) and kidney injuries.

Dr. Kleiman said, "I was impressed with the fact that 60 percent of the subjects who suffered post-bout lacerations of the eyelid, face, or head showed significant hematuria."

Many seasoned veterans go through an entire career with little or no history of laceration. Others cut easily regardless of experience or the number of rounds boxed.

He said that it was possible that the correlation between abdominal injury and facial laceration exists purely by chance and that a badly beaten athlete is more prone to lacerations and kidney injury.

"It is my theory, however, that abdominal trauma [injury] may have a direct or indirect effect on the adrenal gland or liver," he said.

As a result of injury to these organs, various chemical substances or potentially harmful products may develop within the blood stream. During the stress and activity of the fight, these products may prolong the normal clotting time of the blood or render the capillaries more fragile, he said.

As a consequence, the doctor pointed out, the skin tissue is weakened and any cut will tend to bleed profusely. With rest, the circulatory picture rapidly returns to normal.

In his study of 1,518 post-bout urine specimens, Dr. Kleiman observed significant hematuria in 415 boxers or 27 percent of the total number examined. This post-bout hematuria rapidly disappeared, being gone within 24 hours in 92 percent and within 48 hours in virtually all instances.

The doctor said that boxing hematuria is usually an innocent, transient, and painless symptom. He did warn that when it tends to recur, urologic survey is mandatory.

Awards to University of Illinois

The USPHS has awarded a grant of $34,052 to the University of Illinois, Chicago Professional Colleges for research in clinical chemotherapy of cancer. The grant will be under the supervision of Dr. Danely P. Slaughter, Director of the Tumor Clinic.

This brings to $131,014 the amount received during a period of one month. A total of $77,395 was received from the USPHS in addition to the cancer grant.

Continued on the following page

William H. McGregor Professorship in Medicine

The Wayne State University College of Medicine has received a gift of $30,000 from the National Foundation of Rochester (Michigan) to establish the William H. McGregor Professorship in Medicine. The purpose of the gift is to make it possible for the College of Medicine to attract a distinguished scholar and outstanding teacher to its faculty. William H. McGregor was prominent as an industrialist and educator, having been president of the Detroit Board of Education at the turn of the century. He was instrumental in the planning and construction of the old Central High School, now Wayne State's "Old Main" building. His work on the Board's personnel committee during 1895 and 1896 resulted in personnel policies that are the basis for many of the policies and procedures now in use.

Tracheostomy for "Poor Risk" Patients

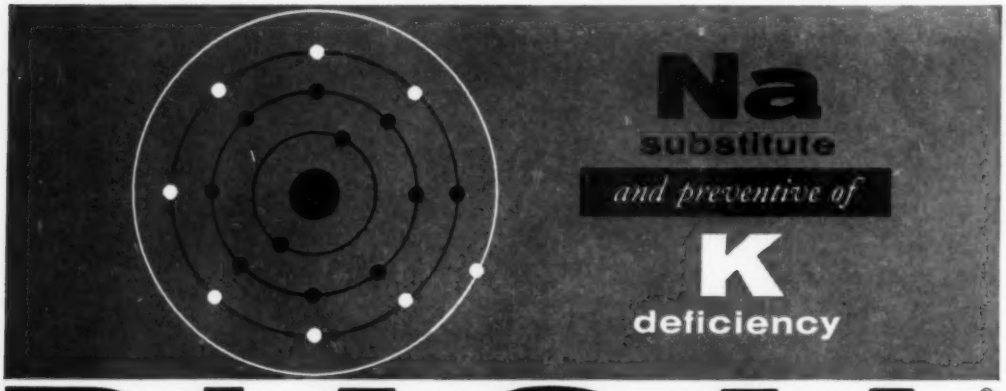
A technique used to help paralyzed polio patients breathe has been suggested as a way of helping aged and critically ill patients survive major operations.

The most common postoperative complications are related to the respiratory system. For feeble or critical ill persons these complications can be very serious. In fact, the danger of these complications sometimes prevents such patients from undergoing major surgical procedures.

However, the technique of tracheostomy (or tracheotomy), in which an artificial airway is made by inserting a tube in the windpipe through the throat, helps the patient breathe, and in turn prevents serious complications.

Three Miami physicians, writing in the *Journal of the American Medical Association,*

Continued on page 222a



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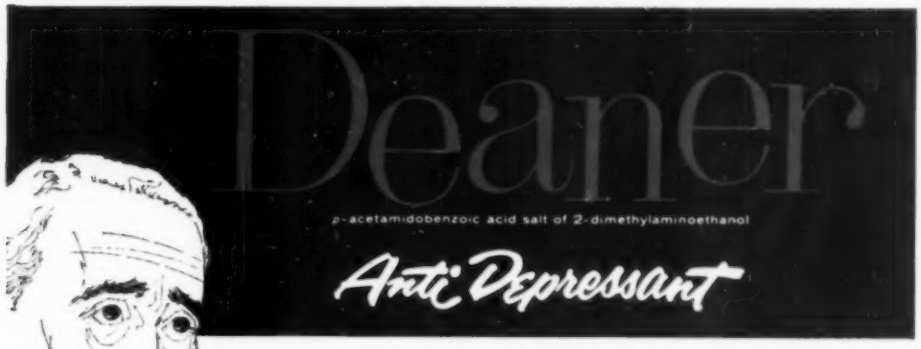
doubly valuable for patients on salt-restricted diets

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Deaner acts gently, gradually, and its effects are prolonged... without causing hyperirritability... without loss of appetite... without elevating blood pressure or heart rate... without sudden letdown on discontinuance.

Deaner is valuable in the treatment of children, especially those whose performance is impaired by behavior problems, whose attention span is too short, and who are emotionally unstable, unpredictable, and unadaptable.

Dosage: Initially, 1 tablet (25 mg.) in the morning. Maintenance dose, 1 to 3 tablets; for children, ½ to 3 tablets. Three to four weeks of therapy may be required for maximum benefit.

Riker Northridge, California

said tracheostomy has been used in the post-operative care of patients with certain thoracic and neurological conditions as well as with polio patients, but it has not received widespread acceptance as an adjunct to treatment for the critically ill general surgical patient.

They noted that "poor risk" patients frequently have preexisting pulmonary disease plus loss of strength necessary for powerful coughing and breathing. These, along with the additional factors of anesthesia and post-operative pain, make it difficult for patients to survive respiratory complications.

Use of tracheostomy helps overcome these difficulties. It is best performed immediately after completion of the major surgery or within the first few postoperative hours.

Within a recent three-month period, the Miami doctors performed tracheostomies on 11 patients. It was thought that extensive surgery would have been uniformly fatal without the postoperative use of tracheostomy, the doctors said. Eight of the patients completely recovered. The other three died of late complications of the primary disease and in only one case did a pulmonary complication materially contribute to death.

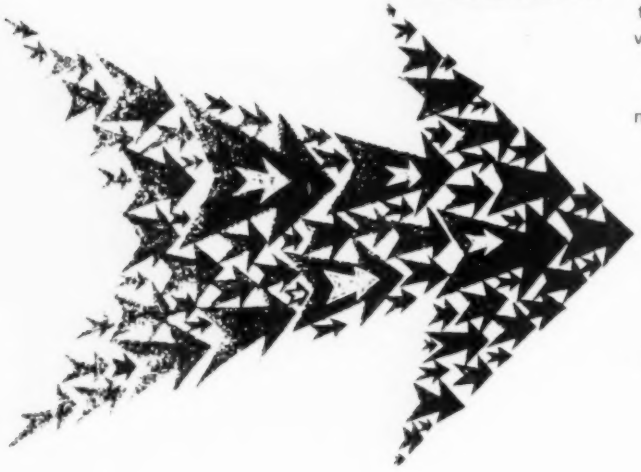
The authors are Drs. Thomas E. Starzl, William H. Meyer, and John J. Farrell of the department of surgery, University of Miami School of Medicine and Jackson Memorial Hospital.

Radiation Studies at University of Tennessee

A grant in the amount of $95,000 to finance the study of the effects of exposure to relatively low amounts of radiation on bodily function has been awarded by the Surgeon General's Office, Department of the Army, to two investigators at the University of Tennessee College of Medicine.

Continued on page 224a

SELECTIVE ACTION



...Phenolphthalein, the active ingredient in Ex-Lax, exerts its greatest effect upon the colon[1] ...acts gently, overnight...in the morning produces a stool very much like normal.[2] When a gentle, effective laxative is needed to help establish normal regularity, Ex-Lax may be recommended with confidence. It may be safely given to the young and old in recommended doses.[3] Each tablet of Ex-Lax contains the equivalent of 1½ grains of standardized yellow phenolphthalein, biologically tested for effective action.

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1. Goodman, L. & Gilman, A.: The Pharmacological Basis of Therapeutics, 2nd ed., Macmillan Co., 1956, p. 1054. 2. Beckman, H.: Drugs, Their Nature, Action and Use, W. H. Saunders Co.: 1958, p. 440. 3. Blatt et al: J. of Ped., Vol. 22, No. 6, p. 725, 1943. Abramowitz, E. W.: Am. J. Dig. Dis., Vol. 17, No. 3, pp. 81-82.



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Traffic Accident Studies

Harvard University, under a grant from the USPHS, is launching a five-year study which, it is hoped, will yield an epidemiological description of the fatal accident situation related to pedestrians as well as to operators of motor vehicles. The allocation for the first year of the study is $115,850. Total support of the program over the five-year period will be $809,820. The research project will be conducted by the Department of Legal Medicine of the Harvard Medical School: co-directors of the study will be Alfred L. Moseley, Research Associate, and Richard Ford, Chairman.

Through this research, which will include both "on the scene" and post-accident studies, the investigators hope to set up guide posts which will point the way toward a reduction in the rapidly increasing rate of traffic accidents both fatal and non-fatal. Courts and other legal groups concerned with assessing the responsibility for traffic accidents may use the accumulated research evidence to better interpret presented evidence.

Investigations will be made of both pedestrian and vehicular accidents in which there were fatalities. The Greater Boston area will be the one studied. From the project headquarters either at the Harvard Medical School or in the downtown Boston area, a team of four specialists will go to accident sites on alert by the police. Members of the team will go to the scene of an accident will be a traffic engineer, an automotive safety engineer, a human engineer, and a physician. Other members of the accident survey team will include attorneys, physicians, pathologists, psychologists, psychiatrists, ophthalmologists, social workers, statisticians and mechanics.

Continued on page 226a

12 *day treatment for tenacious trichomonas*



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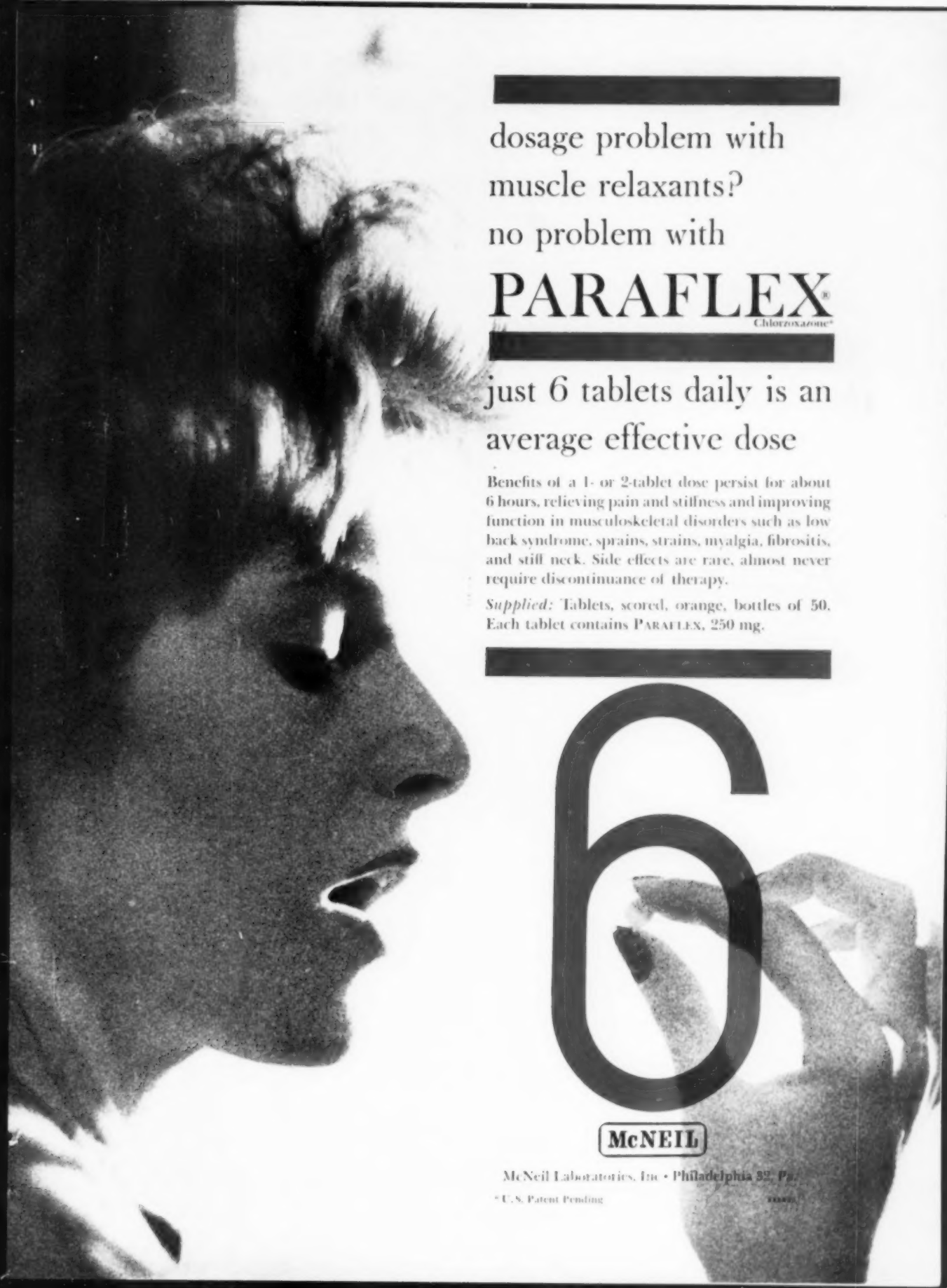
Stilbestrol	0.1 mg.
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1. *Dolkart, Dentler & Barrow, Ill. Med.J., 90:286, 1946*
2. *Adler, Atkinson & Ivy, Am.J. Digest.Dis. 8:197, 1941*
3. *Wozasek & Steigman, Am.J. Digest.Dis. 9:423, 1942*
4. *Williams & Olmstead, Ann.Int. Med. 10:717, 1936*
5. *Cass & Wolf, Gastroenterology, 20:149, 1952.*

*Abbreviation for the Latin "Levis Amplitudo", meaning smooth bulk.

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Chronic Brucellosis Called Emotional Illness

"Chronic brucellosis" consists essentially of an emotional illness, a group of Johns Hopkins University researchers believe.

Brucellosis, also called Malta or undulant fever, is an infection characterized by tiredness, fever and body aches. Caused by Brucella organisms, it is usually acquired from cattle, hogs, sheep or goats.

The Johns Hopkins men, writing in the *Archives of Internal Medicine*, said brucellosis is usually a self-limiting disease. Most patients are well and symptom-free within a year after the acute attack, although brucellosis is commonly considered to be a chronic disease that may persist for years.

When this happens, the Johns Hopkins men believe, the condition results from emotional factors rather than physiological ones.

Of 24 patients who had had brucellosis four to six years before the study, eight were fully recovered; six had had "chronic brucellosis" for a while but were recovered, and 10 still had "chronic brucellosis."

Careful physical and laboratory examination showed that the patients with "chronic brucellosis" could not be distinguished from those who had recovered uneventfully after the acute attack. The two groups were identical with regard to severity, course, and treatment of the acute disease. No evidence of persistent infection with the Brucella organism could be found in the chronic patients.

However, the chronic patients continued to show physical symptoms even though there was no physiological reason for them. Their symptoms were nonspecific—fatigue, headache, "nervousness" and depression—much like those appearing in neurotic persons.

Psychological tests and psychiatric interviews revealed that the chronic patients had considerably more emotional disturbance than did the recovered patients. The majority of the chronic patients appeared depressed and anxious.

Most of the chronic patients had had emotional difficulties in childhood, and had been experiencing significant stress of some sort during the period they were acutely ill. The recovered patients had not undergone such stresses, the doctors said.

They concluded that emotional disturbance was "significantly more prevalent" in the chronic patients and that their "disease" was primarily emotional.

The doctors explained that symptomatic recovery from acute brucellosis "depends critically on the emotional state of the person at the time of acute infection or in the convalescent period. In the wake of an acute Brucella infection there is almost always a period of lassitude or fatigability. In the depressed patient these otherwise transient symptoms merge imperceptibly with depressive fatigue or lassitude and thus appear to be perpetuated.

"The manifestations of the patient's emotional disturbance thus become included by the patient, and often by his physician, in the syndrome of 'chronic brucellosis'."

The reputation of brucellosis as a chronic disease supports the patient's tendency to retain his symptoms for long periods of time. In addition, "chronic brucellosis" offers a readily available explanation for any discomfort that occurs.

The authors are John B. Imboden, M.D., Arthur Canter, Ph.D., Leighton E. Cluff, M.D., and Robert W. Trever, M.D., of the departments of psychiatry and medicine at Johns Hopkins University School of Medicine and the Johns Hopkins Hospital, Baltimore.

Expanded Facilities at University of Oregon

A grant of $1,297,955 from the National Advisory Council of the National Institutes of Health for construction of the University of Oregon Medical School's proposed Medical Research Building was approved, paving the way for a request by the Board of Higher Education for matching funds from the 1959 Oregon State Legislature.

Continued on the following page

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for edema and hypertension

New Units at Philadelphia General Hospital

Three new major facilities, costing nearly $700,000, are under construction at Philadelphia General Hospital, with work expected to be completed in the first half of 1959. The new units—a dental clinic, a pediatrics clinic, and a contagious disease ward—will provide the most modern and complete quarters for departments that are now either temporary or overcrowded. Both the dental and pediatrics clinics are part of the capital projects program, while the third is being made possible from operating budget funds.

Most costly of the three is the dental clinic, costing $386,000, and said to be the best equipped in the nation. The new unit will have air conditioning, an ultrasonic instrument cleaner, x-ray machine, all new dental units, high speed engines, and air rotor. There will be a closed TV circuit available for teaching purposes, lectures, and demonstrations. Also included will be a research laboratory under the direction of Dr. Ned Williams, Professor of Bacteriology at the University of Pennsylvania School of Dentistry. The clinic will be autonomous, doing its own denture work, taking x-rays, and doing its own sterilization.

The contagious disease ward will be located on the first floor of the Pediatrics Building, and will cost $200,000. There will be 44 beds with facilities for complete isolation of youngsters to eliminate any chance for cross-infection.

A total of $112,000 will be spent for the new pediatrics clinic, the amount to cover physical construction only. The new clinic will provide additional waiting area, plus isolation facilities, and a much needed surgical unit, in addition to examining rooms, not only for studying patients, but also for students education, conferences, lectures, and a special area to examine well infants on routine checkups.

Continued on page 230a



Why G.I. patients abandon therapy

Bandes[1] reports that G.I. patients often abandon therapy because of the unpleasant side effects of the prescribed drugs–blurred vision, dry mouth and loginess.

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DOSAGE: 1 tablet t.i.d., with meals, and two at bedtime.

1. Bandes, J.: Combined Drug Therapy in Gastrointestinal Disturbances: Increased benefit through diminished side reactions, Am. J. Gastroenterology, *30*:600, Dec. 1958.

WALLACE LABORATORIES *New Brunswick, N. J.*

Grant to University of Tennessee

Dr. Ralph Tanz of the University of Tennessee College of Medicine has been awarded a $17,122 grant for a study of steroidal cardiotonic structure-activity relationships. The grant was awarded for a three-year period by the National Heart Institute of the USPHS.

Suicide May Result from "Psychic Homicide"

Many persons who kill themselves may actually be the victims of "psychic murder" committed by friends or relatives, according to a New York psychiatrist.

The persons who commit "psychic homicide" are not yet legally held responsible, but theirs is a crime—a crime usually committed by ommission, Dr. Joost A. M. Meerloo said in *Archives of Neurology and Psychiatry*.

"Psychiatrists agree," he said, "that punishment of parents or spouses or bosses is one of the most frequent movitations of suicide. This form of mental blackmail may be conscious in the suicide candidate or can be more subtly hidden behind many rationalizations."

But many other persons commit suicide because they are literally driven to it by someone with whom they identify. Dr. Meerloo said they commit suicide "because they were inadvertently aware of the wish or the command of their proxy that they had to die, though this 'homicidal' verdict had seldom been verbalized in a conscious way."

One case in which a person committed suicide on the unconscious demand of another person involved a man who refused to let his wife undergo treatment for a depressed state. He took a vacation with his secretary and his daughter, leaving his wife alone at home. After



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two days she committed suicide on his unconscious command. The husband remained unaware of his psychic murder.

Dr. Meerloo noted that the acting of death wishes is usually not so obvious. However, the burden of inadvertent hostility and murderous wishes pushing those with weaker egos into depression and suicide is frequently seen.

"Especially in suicide by children," the author said, "we realize how much rejection, teasing and vituperation have to do with loss of self-esteem, and how these humiliations can drive the young person to suicide."

Dr. Meerloo related his concept of psychic homicide to that of brainwashing in which a person is made by another to believe, say and do things he himself would not ordinarily do.

In conclusion, he said, "In the age of encroaching technology and growing community pressure, resulting in weakening ego, decreased self-esteem, and diminishing personal responsibility, these unconscious attacks on a person's will and integrity become more and more relevant."

Dr. Casimir Funk Celebrates 75th Birthday

Dr. Casimir Funk, world-famous pioneer in vitamin research, marked his seventy-fifth birthday on February 23. It was at the Lister Institute in London, in 1911, that Dr. Funk isolated from rice polishings a substance that cured beri-beri. He gave it the name "vitamine," later changed to vitamin. Shortly thereafter, he isolated crystalline nicotinic acid and other vitamin B components from extracts of yeast and rice polishings, and worked out the manner in which thiamine (vitamin B1) is utilized by the body.

He is president of the Funk Foundation for Medical Research, a non-profit organization devoted to cancer and related research, supported in part by the U. S. Vitamin & Pharmaceutical Corporation, with whom he has been associated since 1936. Since 1947, Dr. Funk and his co-workers at the Funk Foundation for Medical Research have been engaged in basic research on problems of cancer, diabetes, peptic ulcer and arthritis.

Continued on the following page



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New Rh Blood Reaction

An explanation for certain puzzling blood reactions in persons receiving transfusions or having babies was suggested by one of the discoverers of the Rh factor.

Writing in the *Journal of the American Medical Association*, Dr. Alexander S. Wiener, in collaboration with Dr. Lester J. Unger, explained a new type of Rh reaction.

The Rh factor is a protein substance found in most persons' blood; however, some persons do not have the substance and are said to be Rh-negative. If they receive blood containing the factor, they build antibodies (agents that fight foreign substances in the blood) against the Rh factor. This causes a serious reaction. Reactions may also occur in babies with the factor who are born of mothers without the factor. This condition is known as erythroblastosis fetalis.

Rh reactions have been thought to occur only between Rh-negative and Rh-positive blood in Rh-negative persons.

Now, however, it has been found that blood reactions occur in Rh-positive persons. Rh-positive persons have been found to have antibodies against the factor that strongly resemble those found in Rh-negative persons. This "seeming paradox" is explained by the fact that there are at least four Rh factors in normal blood. If a person is missing one of the factors, he may react to blood containing the missing factor by developing antibodies against it.

This knowledge may help solve some of the puzzling problems of erythroblastosis fetalis and transfusion reactions, the doctors said.

They pointed out that the possibilities of such reactions are quite small, since only about 1.6 percent of Rh-positive Negroes and only about 0.1 percent of Rh-positive Caucasians would be missing any of the factors.

Dr. Wiener is senior bacteriologist in the office of the Chief Medical Examiner of New York, and Dr. Unger is director of the blood bank at New York University Bellevue Medical Center.

Tracheal Fenestration

A new surgical procedure that gives to patients suffering from chronic respiratory diseases a permanent "windpipe window" in the neck, which they can open and close at will to reach inside the trachea for self-medication and clearance of suffocating mucus was reported recently by Dr. E. E. Rockey, Clinical Instructor in Surgery at New York Medical College, Flower and Fifth Avenue Hospitals, who developed it. The operation has been performed by him on a group of 22 patients, and promises to give relief to those suffering with chronic bronchitis, emphysema, and other chronic lung diseases. The "window" is an airtight, leakproof, skin-lined opening.

Tracheal Fenestration was developed to be used in the treatment of chronic respiratory diseases in which abnormally thick mucus blocks the lungs so that there is extreme difficulty in breathing. The operation creates an opening in the trachea covered externally by airtight, leakproof skin valves. The opening is connected inside to a small funnel-like tube of skin that leads into the tracheobronchial tree, providing easy and permanent access for suctioning and medication. The patient can open the outer skin valves manually and treat himself whenever necessary with his own portable equipment. After self-treatment he can close the two skin valves to restablish the normal tracheal air tract. The valves are in apposition and prevent leakage of air or liquid. They may be repeatedly opened for a matter of minutes or for a longer period of time. If improvement ever justifies such a step, the opening can be permanently closed with surgery.

One of the uses for Tracheal Fenestration is emphysema, an important industrial disease resulting from the inhalation of industrial dusts suffered by stone cutters, metal filers, and coal miners. Although masks are worn to cut down inhalation, emphysema among these workers is still a tremendous problem which leads to serious disability and loss of the ability to work. Also, the procedure may be used for

Continued on page 236a



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cystic fibrosis. There are 7,000 children born in the United States each year with cystic fibrosis, and of these five percent die in infancy due to intestinal complications, while the surviving 95 percent die later from choking before reaching adulthood. Tracheal Fenestration was performed on one such child too late to save his life, but making him comfortable until death. This case indicates that these children can be helped by the procedure if it is performed in time.

Anti-Virus Drugs Sought

Extensive studies seeking drugs to prevent or treat virus diseases will continue at the University of Michigan School of Public Health. A grant of $144,010 has been received from the March of Dimes. The project will be directed by Dr. Thomas Francis, Jr., Professor of Epidemiology and Chairman of the Department of Epidemiology. The investigations by Dr. Francis and his associates are in three fields: (1) the search for anti-virus drugs, (2) the study of what happens when a virus attacks a living cell, and (3) followup studies on how long and effectively Salk vaccine immunity to paralytic poliomyelitis lasts.

Men Are More Successful Than Women at Dieting

Men are more successful at losing weight than women, a new review of medical reports shows.

Writing in the *Archives of Internal Medicine*, Dr. Albert Stunkard and Mavis McLaren-Hume, M.S., said, "Sex of the patients has not, to our knowledge, been previously suggested as a possible factor in the success of efforts at weight reduction.

"We were, therefore, surprised to discover that whenever results of treatment have been reported according to sex of the patient, men have been shown to be more successful than women."

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In three separate studies "a far higher percentage of men than women were able to achieve the modest success of a 20-pound weight loss." The discrepancy between the results of treatment for men and for women is even more pronounced if 40 pounds is considered as a criterion of success, the authors said. They offered no reason for the success of men.

At least three other possible criteria for predicting success have been suggested. They are the presence of the "night-eating syndrome," in which the patient eats at night; the outcome of previous attempts at dieting, and the amount of anxiety in the patient.

The authors found in a review of the literature and in a study of 100 patients at New York Hospital that none of these had any validity as indications of success at weight reduction.

In commenting on the treatment of obesity, the authors said, "In recent years the ill effects ascribed to excessive body weight have received wide attention, as have the benefits to be achieved by weight reduction.

As a result many physicians and their patients, who had formerly looked upon weight reduction as a cosmetic conceit, have come to consider it a therapeutic imperative. A variety of lay institutions, notably the magazines for women, has seized upon this growing interest in weight reduction and has helped to magnify it to the proportions of a national neurosis."

They noted that weight reduction is a very difficult business. For success to occur, patients and physicians alike must give up the naively optimistic idea that weight reduction will occur as a matter of course once treatment is begun and realize that treatment is more than just prescribing and following a diet.

When treatment for obesity is undertaken, it must be conducted by a qualified physician and not by nonmedical persons.

Dr. Stunkard is a psychiatrist at the University of Pennsylvania School of Medicine, who has extensively studied the problems of obesity treatment. Miss McLaren-Hume is a member of the staff of the department of nutrition at the New York Hospital.

Continued on the following page

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Niacinamide	15 mg
Folic Acid	1 mg
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Ca Pantothenate	5 mg
Choline Bitartrate	50 mg
Inositol	50 mg
Ascorbic Acid (C)	50 mg
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l-Lysine Monohydrochloride	25 mg
Rutin	25 mg
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Iodine (as KI)	0.1 mg
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Phosphorus (as $CaHPO_4$)	122 mg
Boron (as $Na_2B_4O_7 \cdot 10H_2O$)	0.1 mg
Copper (as CuO)	1 mg
Fluorine (as CaF_2)	0.1 mg
Manganese (as MnO)	1 mg
Magnesium (as MgO)	1 mg
Potassium (as K_2SO_4)	5 mg
Zinc (as ZnO)	0.5 mg

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Community Health Study

Continuance of the University of Michigan's community health study of Tecumseh, Michigan, has been assured by a five-year grant-in-aid from the National Institutes of Health, a division of the USPHS. The study is an intensive survey of the general health picture of a single community. It began in 1956 under a State appropriation for research in human resources. It involves a population of approximately 8,500 persons in the Tecumseh area. Work thus far on the project has involved a census of the population by both households and kindreds, and collection of data on diseases and disabilities.

Actual investigations are conducted by individual departments and research groups in the School of Public Health and the University of Michigan Medical Center. The overall program is directed and coordinated by Dr. Robert J. M. Horton, Professor of Epidemiology. Information already gained on the study has formed a basis for research on heart disease, influenza, and cerebral palsy. Additional studies are being made of immunization against respiratory infections, the relation of blood groups and fertility, and the development of the infant and pre-school child.

The National Institutes of Health has granted $86,250 for the research program of 1959. Future grants are expected to bring the five-year total to approximately $360,000. The new grant will support planning activities and further basic research studies. Individual projects will be integrated into a study of the whole community health picture. Tecumseh is believed to be the first community in the United States in which such a comprehensive health examination is being made.

Continued on page 240a

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1. Gould, W. L.: Impotence, M. Times 84:302 Mar. '56.
2. Personal Communications from 110 Physicians.
3. Milhoan, A. W., Tri-State Med. Jour., Apr. '58.

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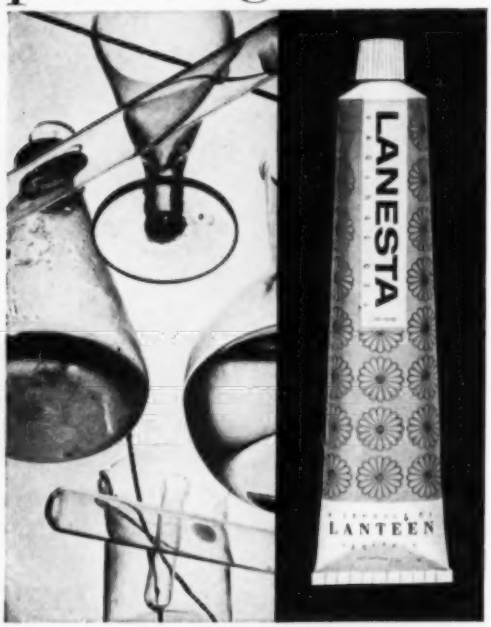
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New Approach for Emotional Illness

A new approach to the treatment of emotional illness has been suggested by two New York psychoanalysts.

They believe that many emotional illnesses are at least partly the result of a person's "quest for certainty." The neurotic behavior represents a means of obtaining certainty.

Most neurotic persons repeat their behavior over and over; they are certain of its outcome and refuse to risk trying a new approach to their problems.

Nearly all the categories of emotional illness may be interpreted as resulting from a quest for certainty, Emanuel K. Schwartz, Ph.D., and Alexander Wolf, M.D., said in *Archives of Neurology and Psychiatry*.

For example, the schizophrenic person withdraws from the threatening environment to the security of his own internally remade world; the depressed person feels that if he withholds all criticism, anger, and aggression, he will be certain not to provoke or to incur the dangers of the hostile and destructive forces around him.

The perfectionist feels that if he is perfect, if he is certain to make no mistakes, he cannot be punished or endangered. Even the hypochondriacal person uses his pills as a way of finding certainty. By taking them, he is certain that he can get through the day.

By approaching such patients through the concept of the search for certainty, psychotherapists may be able to help some patients toward a more healthy mental state, the authors believe.

The "quest for certainty" is tied up with an individual's ability to assess the probabilities of success or failure and safety and danger in a situation and his willingness to take risks.

A person with a healthy mental state is willing to take risks—sensible risks based on a realistic appraisal of the situation. He develops a certainty of what he can and cannot do, but also recognizes that absolute certainty is an impossibility.

Persons who refuse to take many risks are often persons who demand absolute certainty as shown by the outside situation or by a "feeling inside." They are unable to recognize that most situations present risks and uncertainties.

The authors said that the quest for certainty may be viewed as a person's attempt to cope with the anxiety that is always present when there is an unknown factor. The anxiety is a warning of possible danger. When the normal person is warned, he must evaluate the nature of the danger in terms of what is really there and what his chances are of managing it.

However, the neurotic does not do this. He has an unreal impression of the situation. He deals with a situation on the basis of his own ideas—not on the basis of observation and careful weighing of the real chances of success and failure. He must be certain according to his own concepts and not according to reality.

"Whenever all doubts are denied and all differences obscured, we face pathologic consequences," the authors said in conclusion. "Realistic psychologic certainty is all a little uncertain; of this we may be certain."

Dr. Wolf is a member of the staff of the New York Medical College and Dr. Schwartz is on the staff of the Postgraduate Center for Psychotherapy, New York.

Milk in the Diet

According to Dr. Fred J. Stare, Professor and Head of the Department of Nutrition at Harvard University, too much milk in our diet may be a contributing factor in several disease states. Though milk continues to be an important food, its importance in this country, with our abundance and variety of other foods, may have been somewhat overrated by enthusiastic individuals and by a misinterpretation of calcium balance studies and the recommended dietary allowances of the U.S. Food and Nutrition Board. Milk is certainly a highly desirable food for infants, children, and adolescents, but too much milk, so that it crowds other foods out of the diet, is not a desirable nutritional practice. Milk is also a desirable but not an essential constituent of adult diets.

Some noninfectious disease states may be aggravated by the over-use of milk products in the diet. One of these is milk-alkali disease that follows a peptic ulcer diet, and is now rapidly going out of "style" in the United States, and the other is the relationship between atherosclerosis and fat in the diet. In the case of the latter, milk is not an etiologic agent as far as is known, but the consumption of milk and certainly of butter might well be decreased. Because of its calories and the saturated character of milk fat, the consumption of whole milk, cream, and butter may be restricted in individuals who have had coronary thrombosis or cerebral hemorrhage, or in whom these disorders might be anticipated. Since milk in all usual forms is a rich source of sodium, its products are restricted in low sodium diets used for the treatment and prevention of hypertension and many types of edema.

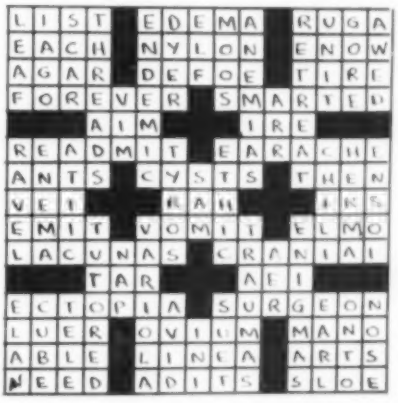
Skin Cancer Studies

Dr. Michael Klein, Assistant Professor of Anatomy at the University of Tennessee College of Medicine, has been awarded a grant of $69,000 by the U.S. Public Health Service to investigate means of altering the course of skin cancer development in mice.

Concluded on the following page

MEDICAL TEASERS

Answer to puzzle on page 63a





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* Sulzberger, M. B. and Obadia, J., Arch. Derm., 73:373 (April) 1956

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Affiliation of Two New York Institutions

New York University and the Institute for the Crippled and Disabled have undertaken joint efforts in rehabilitation research, teaching, and services to the handicapped. The documents of professional affiliation were signed before trustees and officers of the two institutions and distinguished guests, including Bernard Baruch, and Jeremiah Milbank who founded the Institute in 1917. The agreement provides all "types of services necessary for the handicapped to attain his fullest physical, social, and economic capability, and to undertake joint research into all areas of rehabilitation." The University and the Institute will continue to function as financially independent, self-controlled institutions, and their rehabilitation activities will be coordinated through the University's recently created Center for Rehabilitation Services. The Institute for the Crippled and Disabled is an outpatient rehabilitation center whose services include medical treatment, social adjustment, and vocational training programs. It has facilities for making artificial limbs, an extensive library, and it carries on research.

Saskatchewan Cancer and Medical Research Institute

The Saskatchewan Cancer and Medical Research Institute was formally opened in 1958. The Institute has been built on the campus of the University of Saskatchewan College of Medicine, Saskatoon, through funds supplied by the Saskatchewan Division of the Canadian Cancer Society and the Government of Saskatchewan. It is connected by tunnel with the Medical Building and the University Hospital, and will provide housing for the Saskatchewan Research Unit of the National Cancer Institute of Canada as well as a radiation physics group and a tissue culture suite occupied by the Department of Anatomy and Bacteriology of the University of Saskatchewan.

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- Inflammatory diseases
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DIAGNOSIS, PLEASE

(Answer from page 33a)

PULMONARY A.V. MALFORMATION

Lateral view during angiocardiography opacifies the arterial and venous components to the mass in the lower lobe posteriorly.

WHO IS THE DOCTOR?

(Answer from page 89a)

ABRAHAM JACOBI

MEDIQUIZ

(Answers from page 97a)

1 (A), 2 (C), 3 (A), 4 (E), 5 (E), 6 (D), 7 (C), 8 (D), 9 (C), 10 (A), 11 (C), 12 (D), 13 (A), 14 (D).

WHAT'S YOUR VERDICT?

(Answer from page 47a)

The Supreme Court reversed the decision of the trial court and remanded the case for a new trial, holding:

"The conditional privilege must be exercised with certain cautions: (a) it must be done in good faith and reasonable care must be exercised as to its truth; (b) the information must be reported fairly; (c) only such information should be conveyed, and (d) only to such persons as are necessary to the purpose. Whether the physician was discreet and proper with respect to these principles should have been submitted to the jury."

Based on decision of
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  By T. Stacy Lloyd, Jr., M.D., The Pratt Clinic, Fredericksburg, Virginia.

- *The Periodic Pediatric Examination*

  By E. H. Townsend, Jr., M.D., Instructor in Pediatrics, University of Rochester, Rochester, New York.

- *Pulmonary Function Tests*

  By K. Albert Harden, M.D., Associate Professor of Medicine at Howard University College of Medicine, Washington, D. C.

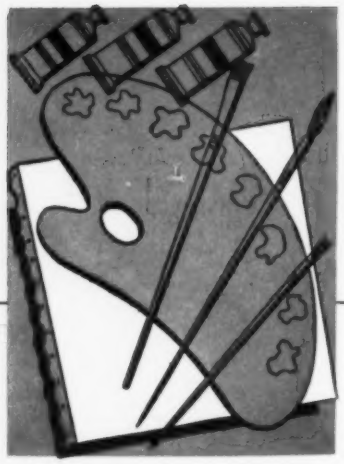
- *Tuberculous Infection in Infancy and Early Childhood*

  By Edwin L. Kendig, Jr., M.D., Assistant Professor, Medical College of Virginia.

- *Treatment of Psoriasis*

  By Harold O. Perry, M.D., Section on Dermatology, Mayo Clinic, Rochester, Minnesota.

- *And many others.*



Covering the Times

ONCE A YEAR, in the spring, a virulent fever strikes countless Americans. Numbered among its victims are physicians, men such as Dr. William G. H. Dobbs who appears on our cover this month. The fever is caused by the intense anticipation felt by fishermen as the opening day for trout approaches. There is only one way to deal with the malady, and that is to get to the nearest active stream and wet a line.

Artist Melbourne Brindle sketched several typical fishing sites along the Housatonic River and Furnace Brook, in Connecticut, then combined features of both in the finished painting. The process, he says, created no signs of fever in him: "I find no difficulty whatever in driving past an opening day scene . . . especially if I'm on my way to the golf course. Golf—now there's a sport!"

On the other hand, Dr. Dobbs is such a serious angler that he always carries his fishing gear with him on his trips around the countryside.

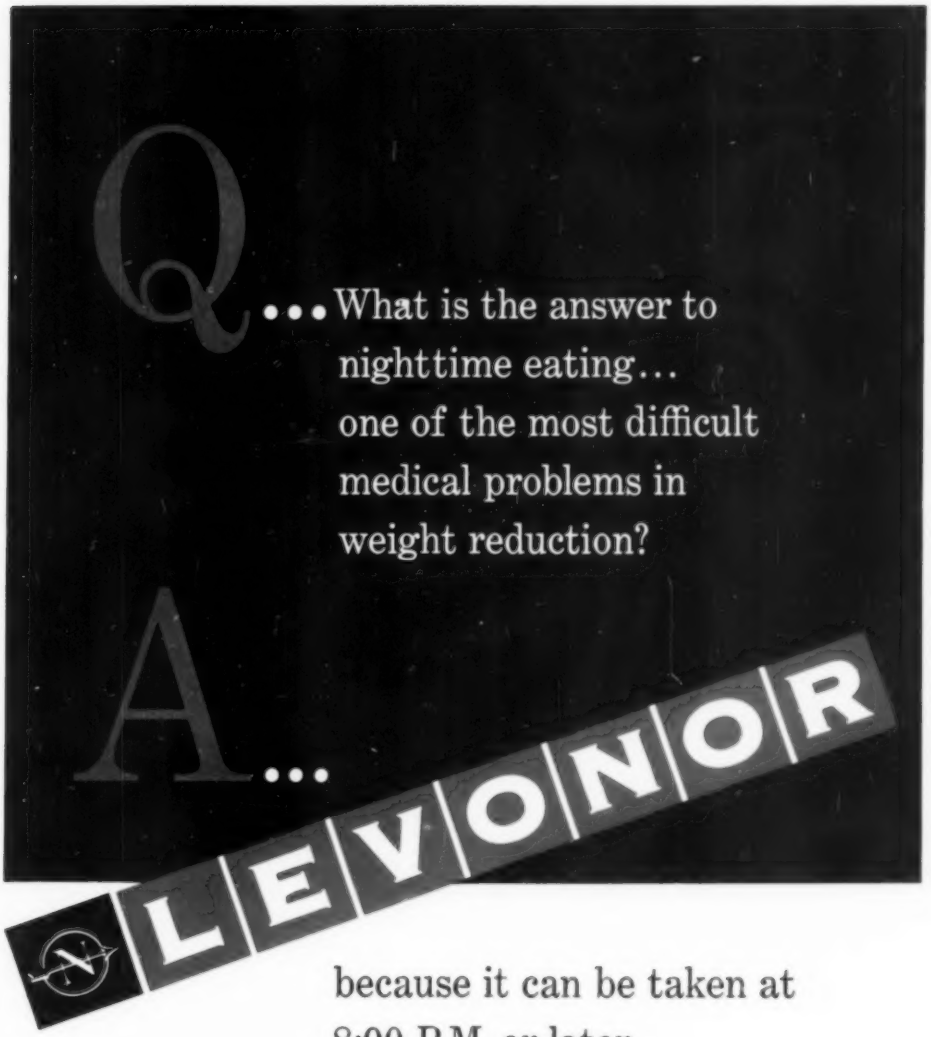
After getting his medical degree at the University of Rochester School of Medicine and Dentistry in 1934, he interned at New Rochelle Hospital and then took a residency in radiology at New Haven Hospital. Dr. Dobbs was the staff radiologist at Grace Hospital (New Haven) from 1938 to 1942, when he entered private practice in Torrington, Connecticut. He is currently associated with five hospitals, is chairman of the A.M.E.F. Committee for the State Medical Society, and is a past officer of his state, county and local medical and specialty societies. Community affairs also take a good share of his time. Despite his busy professional life and his addiction to rod and reel, Dr. Dobbs also finds time to pursue other interests: gardening, photography, travel, U.S. Presidents. He and his wife Elizabeth are the proud parents of four daughters. Carolyn, who is 19 and the eldest, is following in her father's footsteps. She is a sophomore taking a pre-med course at the University of Rochester.

Dogs (one of them is black patch at left) crowd in on Dobbs family portrait. Right: Dr. Dobbs (cap) and friend on real fishing trip.





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Thos. Leeming & Co. Inc. New York 17.

1 tablet all day

1 tablet all night

1. Eisfelder, H.W.: Case history 4/35. Personal communication. 2. Fuller, H.L. and Kassel, L.E.: Antibiotic Med. & Clin. Therapy, 3:322, 1956.

The Menopausal Arthritic....

NEEDS STENISONE TO RELIEVE HER SYMPTOMS ....YET AVOID INSIDIOUS SIDE EFFECTS

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References: 1. Stein, I., and M. L. Beller, *Geriatrics, 14*:99, 1959. 2. Howell, D. S., and C. Ragan, *Medicine, 35*:83, 1956. 3. Kammerer, W. H., *et al., Arth. and Rheum., 1*:122, 1958. 4. Ward, L. E., *et al., Ann. Rheum. Dis., 17*:145, 1958. 5. Banghart, H. E., *Amer. Proc., 5*:964, 1954. 6. Perloff, W. H., *J. Phila. Gen. Hosp., 2*:90, 1951.

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ORGANON INC., ORANGE, NEW JERSEY



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1. M. Clin. North America 38:485 (March) 1954. 2. J.A.M.A. 162:1031, 1956. 3. J.A.M.A. 156:680, 1954. 4. Yale J. Biol. & Med. 28:308, 1955/56.

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